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14 NOVEMBER 1986

## Worldwide Report

# TELECOMMUNICATIONS POLICY, RESEARCH, AND DEVELOPMENT

**FBIS**

FOREIGN BROADCAST INFORMATION SERVICE

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14 NOVEMBER 1986

# WORLDWIDE REPORT

## TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT

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INDONESIA

#### DAILY VIEWS PARABOLIC ANTENNA REGULATION

BK151517 Jakarta KOMPAS in Indonesian 9 Oct 86 p 4

[Editorial: "Parabolic Antennas and the Development of the Information Age"]

[Text] A new set of regulations on the use of parabolic antennas for television reception has been laid down through two recent ministerial decrees and two directives from director generals. The regulations basically stipulate that the antennas can be only used to receive television programs from the Palapa satellite. The antenna owners can distribute or relay television programs only from the Indonesian State Television, and a special permit for this purpose must be sought from the directorate general of posts and telecommunications as well as the directorate general of radio, television, and film. It was also stipulated that the parabolic antennas must be produced by domestic factories.

We can make several comments on the new regulations. The first is related to the issue of information and the technology of information dissemination. Strictly speaking, the essence of the new regulations is aimed at restricting the flow of information and the use of information technology. The flow of information originating from orbiting satellites in the sky is probably viewed as a threat to the political ideology, economy, culture, defense, and security of the Indonesian people. As it is impossible for us to restrict the sources of the information, then the recipients of the information must be restricted. This is analogous to closing people's eyes and ears as it is impossible to ban certain performances.

Such an attitude is tantamount to rejecting reality and obstructing progress.

The age we are now entering has made such rapid progress because of human technological progress. We no longer live in an agrarian society in which our horizon is our village's boundary. In fact, we have begun to move out of the industrial age in which the mass products of various countries have become part of our daily life and we are now entering a new age called the age of information technology. The flow of products from the industrial age can still be curbed by customs officers, but the flow of information is not as easy to control.

Current technological progress is so rapid that it is difficult to catch up, let alone to stop it. According to pundits, national boundaries will very soon

be meaningless. The world, now still defined by national boundaries, will soon be converted into a global village. Through the rapid flow of information, what is happening at a certain spot in the world will be known at another spot almost at the same time.

Technological progress will also render all efforts to obstruct the flow of information futile, or at least more expensive.

A parabolic antenna is a good example. Several years ago, an antenna with a diameter larger than 10 meters was needed to receive signals transmitted by satellite. Three years ago, a 4-meter antenna could do the same job. Right now, a 3.5-meter antenna gets good reception.

Let us assume that we want the public to receive only television programs carried by Palapa satellite, which can be done with a 1.5-meter antenna. To receive transmissions from Intelsat, people need a larger antenna.

However, we can never be sure that in the near future technological progress will not make it possible to produce 1.5-meter antennas more powerful and versatile than the current ones. Besides, if the direct broadcasting system [three preceding words in English] satellites, which have stronger signals than our Palapa satellite, are put into orbit in the near future, the restriction on the size of the antenna will certainly be meaningless. This does not take into account the ingenuity of Indonesian electronic engineers, who can develop various ways to intercept satellite transmission signals.

Enforcing the regulations in great detail will also be problematic. It will be difficult to know which antennas are being directed at the Palapa or non-Palapa satellites. If there are only 100 or 200 antennas in a certain area, supervising them will probably be easy. However, we must remember our archipelagic nation consists of some 13,000 islands covering some 920,000 square kilometers of territory. Nobody can imagine how the government will effectively supervise such a vast area with thousands of parabolic antennas on it. Neither can one imagine how much money the government will spend on the task.

There are plenty of examples on technological progress being able to bypass restrictions on the flow of information. Whenever a foreign publication carries an article considered unsuitable for domestic consumption and subsequently has its pages blackened with ink, photocopies of such articles will very soon be circulating among the public.

Several considerations mentioned earlier will probably make us review any new regulations aimed at restricting the flow of information and technology.

The best way to cope with the greater flow of information in our world is probably through educating our people so they can distinguish the information that is beneficial or destructive to them. We still do not know whether all incoming information is bad and destructive. Perhaps there is more useful information than destructive.

Do we really have to close our eyes and ears to block the entry of all kinds of information, including the good and useful?



INDONESIA

#### NEW REGULATIONS ON PARABOLIC ANTENNAE EXPLAINED

BK151256 Jakarta THE JAKARTA POST in English 8 Oct 86 p 1

[Text] Jakarta (JP)--Individual parabolic antennae owners have to register their receivers with the Directorate of Radio, TV and Film (RTF directorate) within 3 months.

RTF Director General Subrata and Director General Post and Telecommunications Abdulrachman conveyed Tuesday the government's decision on the usage of parabolic antennae by individuals, distributors and closed circuit users.

Individuals who would like to use parabolic antennae for specified areas (distributors) have to obtain permission from the Directorate General of Post and Telecommunications after getting approval from the Information Ministry.

"Applicants for distributors should be legal entities and parabolic antennae used for this purpose should be locally made," Abdulrachman said.

TVRI [Indonesian State Television] now has 9 broadcasting stations with 205 relaying stations serving some 110 out of 160 million population.

"We are thinking of the blank spot areas," Subrata said. "Hopefully, there will be people in these areas who can afford to buy the parabolic antennae."

The government's decision ended uncertainties about the usage of parabolic antennae which began pouring [into] the country about 4 years ago.

Special users who have closed circuit systems such as hotels will have to obtain permission from the Information Ministry and RTF directorate.

"Hotels are facilities closely related to tourism in this country. In principle, we agree to their usage of the antennae. Subsequent regulations will be issued by the RTF directorate general," Abdulrachman said.

The regulations, comprising four decrees from the Information Ministry and the directorate general for post and telecommunications, prohibit the usage of import parabolic antennae for distributors.

"Locally made antennae have been fixed to beam Palapa satellite signals only. Distributors are not allowed to relay programs other than those of TVRI. Neither are they allowed to relay commercial video programs," Abdulrachman said.

Individual owners are not allowed to relay other satellite signals except the Palapa satellite. "Since the Palapa satellite also relays programs from Thailand and Malaysia, individual owners can enjoy these programs. But of course, there are special fees for this of which the amount is still under discussion," Subrata said.

He added that the government's appeal to individual owners to stick to Palapa satellites is based on a moral obligation. "We are aware that other satellites may monitor programs which are not always compatible with our ideologies."

The registration deadline for individual owners will be on 11 December. After this date, there will be no more imports of parabolic antennae. Abdulrachman also expressed the hope that the companies taking part in future communications exhibitions will display only those antennae having the capacity specified by the government's regulation.

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CSO: 5500/4302

PEOPLE'S REPUBLIC OF CHINA

MINISTRY OFFICIAL ON COMMUNICATIONS PLANS

HK030321 Hong Kong SOUTH CHINA MORNING POST in English 3 Oct 86 BUSINESS POST  
p 2

[By Olivia Sin]

[Text] China's one billion people are served by only 6.3 million telephones.

Although Beijing leaders have designed telecommunications as a priority development area, the shortage of telephone sets is unlikely to be solved in this century.

According to the vice-director of the Technical Information Center of the Chinese Ministry of Posts and Telecommunications, Mr Xue Chunpei, the country plans to increase the total number of telephone sets to 10 million by 1990. The figure will rise to 33.6 million sets by the year 2000, which will still be far from satisfying the needs of the ordinary public.

Mr Xue is a member of a high-level Chinese delegation now in Hong Kong to promote a telecommunication exposition to be held in Beijing in April.

Few households in China have telephones, considered a general necessity in more developed countries. It is, therefore, not surprising to find a Chinese village of hundreds of households sharing one telephone.

Comparatively speaking, the communications network is better developed in the major cities like Beijing, Shanghai, Guangzhou and Tianjin.

Mr Xue admitted that the development of telecommunications in the rural areas lags far behind the big cities. It is understood that less than one-third of the 6.3 million telephone sets are in rural areas. Nevertheless, he said to satisfy the needs of big cities, most of the extra 3.7 million telephone sets to be installed in the next five years will be in the coastal regions.

Apart from telephone sets, he said China will need more than 500,000 digital exchange lines in the next few years.

Sophisticated equipment like microwave stations, optical fibre links and satellite communication ground stations will also be needed.

Mr Xue said China is interested in forming joint ventures with foreign companies to develop advanced telecommunications equipment and techniques. Among them are digital microwave system, optical fibre communication equipment and postal sorting technology.

In addition, he said China is speeding up the development of longer distance communication links aimed at bridging the gap between the North and South.

For instance, he said large capacity digital microwave trunks will be built to facilitate communications between Beijing and Shanghai. Long wave optical fiber trunks will be built to link up the major cities of Wuhan, Chongqing and Nanjing.

Mr Xue said a number of postal centers will be set up in provincial capitals to speed up mail services.

Another member of the delegation, Mr Luo Kang, said China will import advanced electronic components and technology to enhance its development in the industry, science and defence sectors.

Examples are radars, electronic warfare equipment and precision measuring instruments, he said.

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CSO: 5500/4131

PEOPLE'S REPUBLIC OF CHINA

PRC PLANS TO UPGRADE COMMUNICATIONS TECHNOLOGY

OW021932 Beijing XINHUA in English 1518 GMT 2 Oct 86

[Text] Hong Kong, 2 October (XINHUA)--China is interested in importing advanced posts and telecommunications technologies and facilities, a Chinese official said here today.

These include optical fiber communications and digital multiplex equipment, telecommunication instruments, and technology for producing telephone sets and postal sorting facilities.

Speaking at a press conference here today, Xue Chunpei from the Chinese Ministry of Posts and Telecommunications said that China's rural areas, where more than 80 percent of China's population live, is a "vast market" for such equipment.

At present, less than one-third of China's telephones are installed in the countryside, he said.

According to China's Seventh 5-Year Plan (1986-90), the total number of telephones should reach up to 10 million by 1990, and one-third of the new lines will link villages.

Xue said that along with rural economic development, a growing number of peasants wants to install telephones.

China expects to have 33 million lines of telephone at the turn of the century, more than 5 times the current total. Even then, there will be only 2.8 telephones for an average of 100 people, still falling far behind the world standards, he added.

Xue is a member of a delegation which has just ended a tour to Britain, France, Federal Germany and Italy.

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CSO: 5500/4134

PEOPLE'S REPUBLIC OF CHINA

ZHU GAOFENG SPEAKS TO MARK WORLD POST DAY

OWO90109 Beijing XINHUA in English 1440 GMT 8 Oct 86

[Text] Beijing, 8 October (XINHUA)--China will greatly promote its development of posts and telecommunications and expand its postal relations with other countries, Vice-Minister of Posts and Telecommunications Zhu Gaofeng said here today.

Zhu was speaking at a gathering held this afternoon to mark world post day.

He noted that since this year is the international peace year designated by the United Nations, it is fitting that the Universal Postal Union has decided that the theme of this year's world post day is "The post is the messenger of peace."

Since the founding of New China in 1949, Zhu pointed out, great progress has been scored in China's posts and telecommunications.

Now there are more than 300,000 postal workers in China working in over 53,000 post offices. In 1949, however, there were only some 4,800 post offices, 100,000 postal workers with a postal coverage of less than 12,000 km. The postal route has extended to more than 4 million km.

Compared with 1949, post offices in China handled in 1985 36.8 times more letters, 26.5 times more parcels and 35.5 times more money order, and distributed 58 times more newspapers and magazines, Zhu said.

So far, the country has established direct postal relations with more than 110 countries and regions, with more than 100 million letters and parcels handled each year.

He said posts and telecommunications departments should take advantage of the country's economic reform and improve the postal service so as to better serve socialist construction.

Liu Gengyin, vice-president of the Chinese People's Association for Friendship with Foreign Countries, also spoke at the meeting.

A letter from Botto de Balaus, director-general of the International Bureau of the Universal Postal Union, was read out at the meeting.

Zhu Xuefan, vice-chairman of the National People's Congress Standing Committee, was present at the meeting.

To mark the occasion, the Ministry of Posts and Telecommunications will issue tomorrow a philatelic-numismatic cover and the Beijing Philatelic Association will hold an exhibition at the Chinese Art Gallery on the subject of the international peace year from 9-16 October.

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CSO: 5500/4134

PEOPLE'S REPUBLIC OF CHINA

BEIJING APPROVES SINO-JAPANESE OPTIC VENTURE

Hong Kong BUSINESS STANDARD in English 20 Sep 86 p 1

[Article by Tony Ngan]

[Text]

A ONE-billion-yen joint venture between a long-established Japanese manufacturer and a unit under China's Ministry of Machinery Industry has been granted a business licence by the Chinese government to make hi-tech optic fibres.

The joint venture was disclosed in this week's issue of *China Business Intelligence*, published jointly by CITIC (China International Trust and Investment Corporation), *Bridge* magazine in China, and the Almanac of China's Economy in Hongkong.

Known as the Shianfu Optical Fiber & Cable Co, the venture is 50% owned by Furukawa Electric Co — an electric wire non-ferrous metal manufacturer with a 102-year history — whose products include mining equipment, generators and batteries.

The Chinese partner in the new company is the Xian Electric Cable Works, a subsidiary of the Xian Electric Power Machinery Manufacturing Company, which is directly under China's Ministry of Machinery Industry of China.

Xian Electric Cable Works is a plant specialising in producing electric communication cables. It has been studying, developing and making some optical fibres and cables.

Furukawa Electric has been developing optic fibres and cables since the early 1970s and is said to be among the world's major optic fibre cable producers — enjoying good relations with a leading maker in the field, the American Corning Glass Corp.

Furukawa co-operates with other Japanese manufacturers in the technical study and development of optic fibres, but also reported considerable achievement of its own in such technology.

Shianfu has been projected to produce 20,000 kilometres of high-quality optical fibre each year, which is made into about 2,000 kilometres of cables of various specifications.

Construction of Shianfu's optic fibre cable factory is expected to be completed in the latter part of 1987. The plant will be manned by a staff of about 320.

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CSO: 5550/0010



PEOPLE'S REPUBLIC OF CHINA

VICE MINISTER DISCUSSES COMMERCIAL SATELLITE LAUNCHING

HK061120 Hong Kong AFP in English 1114 GMT 6 Jun 86

[Text] Beijing, 6 June (AFP)--China hopes to carry out its first commercial satellite launch for a foreign country by the end of next year, Aeronautics Vice-Minister Sun Jiadong said Friday.

He said that the launch price would be 10 to 15 percent lower than the average international price, and that the people's Insurance Company of China (PICC) would offer below-market insurance rates for launches.

Recent problems in the U.S. and European space programs have fueled interest in China's entry into the international launch market, analysts said.

The Aeronautics Ministry's commercial branch, Great Wall, has already signed letters of intent with the Swedish space program and with a private U.S. firm, Teresat, since offering its two-stage Long March II and three-stage Long March III launch vehicles to foreign users last autumn, Mr Sun said.

The Swedish satellite would not be ready for launch for 2 or 3 years, but some U.S. firms might launch earlier since the satellites were already completed, he said.

"It all depends on how the talks go," he said, adding that he expected China's first foreign satellite launch to take place by the end of 1987.

Chinese officials say there have been expressions of interest in its launch program from companies in Britain, Belgium, Thailand, Australia, and Canada, as well as agents acting as brokers for Indonesia.

Asked about problems in the U.S. and European programs, Mr Sun said both operated at a high technical level and he was confident they would recover quickly from their temporary setbacks.

Meanwhile, PICC Vice-President Cheng Wanzhu told reporters that the company would seek re-insurance abroad and would make up the difference between international rates and the lower rates it would charge foreign clients.

PICC would, he said, naturally want information on the foreign satellites it was insuring. "If people are concerned about this they can seek insurance elsewhere," Mr Sun said.

Under their letter of intent, Teresat aims to have China launch a Palapa-B communications satellite which was retrieved from a faulty orbit along with another communications satellite by a U.S. space shuttle in 1984.

Western technical experts said publicity from the signing of a letter of intent last month was intended to help Teresat raise funds to purchase the satellite from an insurance consortium that now owns it.

Despite China's low prices, lack of financing by Teresat and U.S. Government constraints on the transfer of sensitive satellite technology may still block the launch, the experts said.

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CS0: 5500/4134

PEOPLE'S REPUBLIC OF CHINA

DEVELOPMENT OF SATELLITE TELEVISION DISCUSSED

Beijing DIANZI SHIJIE [ELECTRONIC WORLD] in Chinese No 6, 15 Jun 86 pp 2-4

[Article by Chen Kejun [7115 0668 6511]: "The Development of Satellite Television Broadcasting in China"]

[Text] In May 1985, the State Council Office of the Leading Small Group for the Promotion of Electronics decided that we would use a C-band hemispheric beam transmitter in the leased international communications satellite V to broadcast the first television programs from the Central Broadcasting Station. This would be a transition plan for satellite broadcasting in this country, by which we will progressively develop satellite broadcast television. Within the past year, this work has made new progress.

The Characteristics and Function of Satellite Communications and Broadcast Television

Satellite communications and broadcast television is a way in which radio signals are transmitted by satellite. Synchronous satellites are generally satellites positioned over the equator at about 36,000 km. Their operational speed (angular velocity) is the same as the rotation of the earth, and therefore the satellite and surface of the earth are relatively static, for which reason these satellites are called synchronous (or static) satellites.

Satellite communications and broadcast television are characterized by a broad area of coverage, where a single satellite can cover our entire territory and territorial waters, even as much as one-third of the earth's surface; communications and broadcast television are not restricted by distance, terrain, nor geographical conditions; channels are stable, high in quality, and work in all weather; there is great capacity for communications and broadcast television, and various services such as telephone, telegraph, data, facsimile, and video can all exist together, and many sets of broadcast television programs may be transmitted.

China has a vast territory, complex terrain, is mountainous over 70 percent of our territory, and has many islands, mines, and forested areas. When we received programs from Central Broadcasting in the past, for areas other than the Beijing area the programs were first transmitted to medium and large cities by microwave circuits and then relayed through television towers or

differential relays for reception by subscribers. At present, the length of microwave circuits is limited, the coverage rate is very low, many areas cannot directly receive television programs from Central Broadcasting in real time, and communications are quite difficult. At the same time, as microwave circuits increase in distance, the video and signal quality are difficult to preserve. Microwave circuits are expensive, and some areas are difficult to connect. So, developing broadcast satellites and ground stations is an economical and effective technical means by which to resolve coverage for this country's communications and broadcast television.

#### The Situation Regarding Construction of Satellite Groundstations in China

Exploratory work in China's use of satellites for communications and broadcasting began in the early 1970's. Projects during the first period were of an experimental and trial nature. In 1978 the Nanjing groundstation, earliest constructed (using analog equipment), and the Shijiazhuang groundstation (built for digital equipment) used the French-West German symphonic satellite, and in 1982 used the international communications satellite models IV-A and V to successfully carry out satellite communications experiments. On 8 April 1984, our first launch of and experiments with a synchronous communications satellite marked the entry into a new stage for satellite communications and broadcast television technology in this country. It used a 6/4 gigahertz bandwidth, two relays on the satellite, and six transceiving satellite groundstations in Beijing, Shijiazhuang, Nanjing, Urumqi, and Lhasa to form the first satellite communications network and broadcast television system in China. The transmitters on these satellites used spherical beaming, from which the equivalent omnidirectional radiating power was only some 20 db/watt, and the groundstations had to use 10, 13, and 15 meter diameter antennas before they could get television video quality of levels 3.5 to 4. Beginning 1 November 1985, China officially leased a hemispheric beam C-band transmitter on the international communications satellite V at 66 degrees east longitude, with an equivalent omnidirectional radiating power of about 30 db/watt. The first Central Broadcasting programs broadcast with this throughout the country were presented in the early part of October 1985 to the old base areas, minority regions, and the frontiers by 53 satellite television groundstations constructed by the State Council throughout the world with antennas of diameters from 6 to 7.5 meters, and where video quality was of a grade 3.5 to 4. Twentythree groundstations built by the Ministry of Electronics are distributed throughout the cold, plateau, and frontier regions of the country. Before the New Year's holiday in 1986, another more than 120 groundstations for satellite television reception were built throughout the country having antennas of 6 to 7.5 meter diameter. Based on current orders for equipment, the Ministry of Electronics will have built more than 1,000 groundstations with 6 to 7.5 meter antennas by the end of this year. On 1 February 1986, the functional communications and broadcast synchronous satellite that we launched was set at a position of 103 degrees east longitude. It was fitted with a domestically produced parabolic beam antenna, which allows the satellite radiating power to be basically concentrated within our territory. Therefore, the intensity of the signal has been clearly improved, and the equivalent omnidirectional radiating power can reach about 34 db/watt. The television quality received on the ground has been visibly improved throughout all areas of the country. Equivalent

omnidirectional radiating power is strongest for the Chengdu, Sichuan area, at the heart of the beam path. With the Chengdu, Sichuan area at the center, it goes east to Shanghai, west to Lhasa, north to Hohhot, and south to Nanning. This is an area approximately 40 percent of our vast territory, within which groundstations equipped with 4.5 meter diameter antennas have a video quality from level 3.5 to 4. In the northeast of our country, the northwest of Xinjiang, the west of Tibet, and the coastal islands of Hainan and Taiwan, with groundstations having 6 meter diameter antennas video quality can be at level 3.5 to 4. This year we have also decided to buy two hemispheric beam C-band relays on the international communications satellite V at 66 degrees east longitude, and satellite television teaching programs will begin from 11 July this year, with programs having economic information beginning at year's end. Satellite television teaching will be disseminated to the county level during the first 3 years of the Seventh 5-Year Plan, going to the township level during the last 2 years. This will present a regenerative prospect for the development of satellite television reception stations and transmitting differential relay stations in this country. The opening up of functional communications and broadcast television satellites in this country will also give great impetus to ground reception stations with antennas of 4.5 meters diameter. During the Seventh 5-Year Plan, this country will itself develop broadcast television satellites with many relays onboard to retransmit many sets of television programs.

For several years now, the Ministry of Electronics has produced more than 50 medium to large satellite groundstations with antennas in diameters of 10, 13, 15, 20, and 25 meters and antenna feed servo-trace systems for research in the areas of military use, weather, astronomy, intelligence, teaching, and science research; they have researched and produced more than 150 small satellite television ground reception stations having 2 to 3 meter antennas for the L and K bands (digital sound accompaniment). We are now cooperating with the United States and Canada in small scale broadcast television groundstations with from 1 to 3 meter diameter antennas for sale in the international market. We are also cooperating with Canada in technology to develop and manufacture a new generation satellite ground system with multi-use frequencies and low secondary lobes.

#### The Composition of Satellite Broadcast Television Transmission Systems

Satellite broadcast television transmission systems include uploading transmitter stations and measuring and control stations, the satellite, ground receiving station networks, and the broadcast system, as well as the program creation system. A diagram is shown in figure 1.

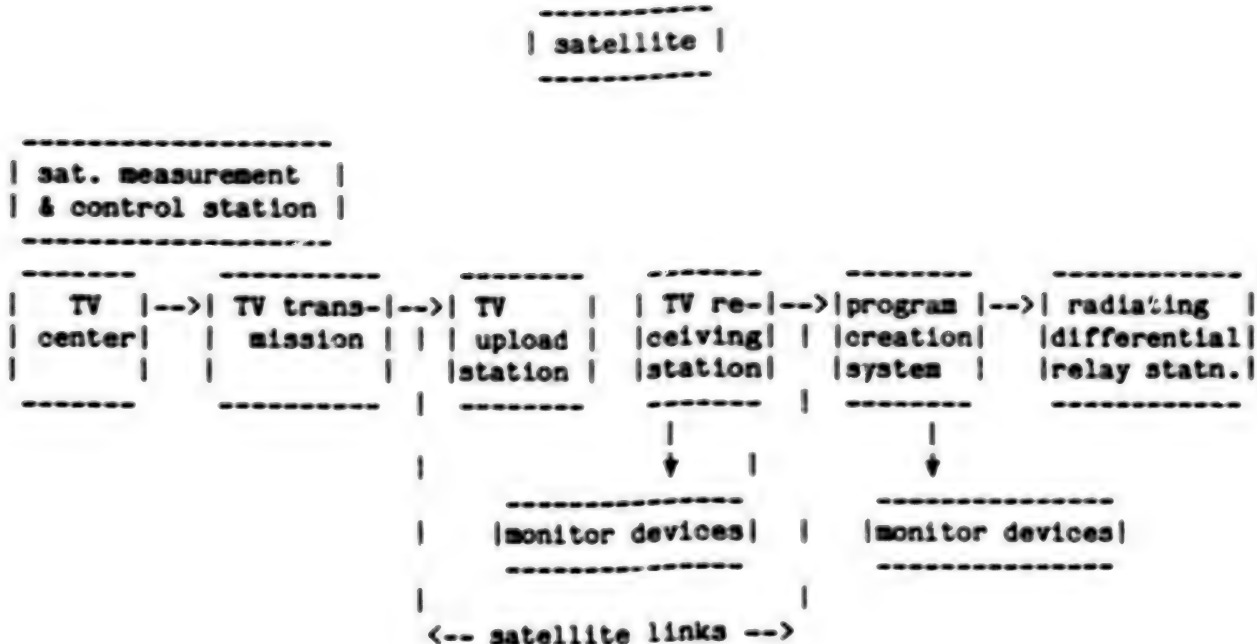


Figure 1

The main task for the upload station is to transmit the programs from the broadcast television center to the relay on the broadcast satellite, and at the same time to receive the broadcast television programs relayed by the satellite for monitoring devices.

Measurement and control stations are to allow the satellite to operate normally on track, to complete the assigned tasking, and whenever necessary to control the position and working state of the satellite in its orbit. When needed, they can provide the satellite with certain instruction signals for remote control and telemetry, as for example to turn on and off the relay, to switch to reserve systems on the satellite, and to regulate the positioning of the satellite.

The ground receiving station network is composed of various ground receiving stations, which in view of current actual conditions in this country are primarily to develop collective reception. The size of the antenna diameter at the receiving stations is determined by the satellite equivalent omnidirectional radiating power and the demands for video quality, which are selected by the user (see table 1).



Table 1 Ground Receiving Station Antenna Diameter

Satellite Equivalent Omnidirectional Radiating Power (db/watt)	Level 3.5 Video Image Quality (for viewing)	Level 4 Video Image Quality (for re-transmission)
30	6 meters	8 meters
33	4.3	6
36	3	4.3
38	2.4	3.4

Collective reception is the retransmission to display equipment, such as large screen projection television sets and multiple unit TV sets through cable television (including public antennas and closed circuit television), the television programs received by the receiving stations. These are for collective reception by organizations, schools, military units, and mines and factories and for viewing by individuals and families in high rise complexes. The connections between satellite television reception and the cable television system is shown in figure 2.

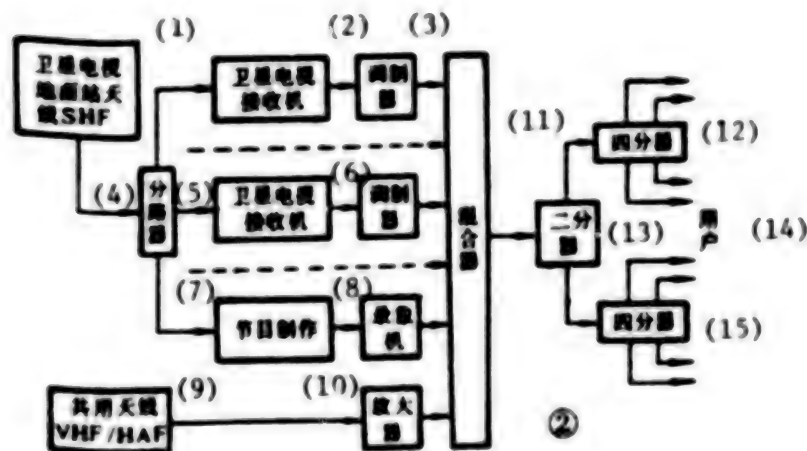


Figure 2. Key:

- |   |                            |
|---|----------------------------|
| (1) satellite television ground station antenna SHF | (8) video taping equipment |
| (2) satellite television receiver                   | (9) public antenna VHF/HAF |
| (3) modulator                                       | (10) amplifier             |
| (4) shunt   | (11) mixer                 |
| (5) satellite television receiver                   | (12) four-way divider      |
| (6) modulator                                       | (13) two-way divider       |
| (7) program creation                                | (14) user                  |
|   | (15) four-way divider      |

The retransmission system is television programs received by the satellite television ground stations that are then transmitted after reworking, or are directly broadcast in real time after middle frequency modulation or are retransmitted differentially for direct viewing by subscribers. See table 2 for estimates regarding the power of relay transmitters (or differential relays) in the plateau region, the altitude of transmission towers, and areas of coverage.

From the end of the 1960's to the present, the Ministry of Electronics has formed designs and production capacities for a comprehensive satellite ground station and accompanying equipment, it has fostered a quality technical contingent, and has gathered them together into research institutes and factories with great technical capacity and advanced techniques. It has serialized batch production of C-band satellite television ground station reception stations and accompanying equipment, and can as well train technical personnel and provide various technical services that are effective and convenient. At the same time, it can also take on the responsibility for design and production for the international market of various kinds and sizes of satellite communications, broadcast television reception stations, and antenna systems in the L-band, C-band, S-band, and K-band. It is certain to make even greater contributions to the development of domestic and foreign communications and broadcast television.

Table 2 Estimates Regarding Areas of Coverage for Retransmission Transmitters

transmitter power (watts)	transmitter tower height (meters)	transmitting antenna gain coefficient	perimeter field strength (microvolt/ meter)	VHF coverage radius (kilometers)	UHF coverage radius (kilomtr)
3	10	3	4,500	1 - 2	3 - 4
10	10	3	4,500	1.5 - 3	4.5 - 6
50	30-50	3	750	4 - 8	12 - 16
100	30-50	3	750	5 - 10	15 - 20
1,000	100	6	4,500	20 - 40	40 - 50
5,000	180	6	4,500	25 - 50	/
10,000	180	6	4,500	30 - 60	/

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CSO: 5500/4165



PEOPLE'S REPUBLIC OF CHINA

GROUND STATION PROCESSES SATELLITE SURVEY DATA

OW241226 Beijing XINHUA in English 1207 GMT 24 Sep 86

[Text] Beijing, 24 September (XINHUA)--China has built a remote ground station to process data concerning China's land resources transmitted by satellites launched by France and the United States, a leading scientist said today.

Zhang Libing, vice-director of the Space Science and Technology Center of the Chinese Academy of Sciences, told XINHUA the station is one of the four most advanced in the world. "It will help the people of China learn more about the earth from the vantage point of outer space," he said.

Located in Miyun County on the northeastern outskirts of Beijing, the station--a cooperative project of China and the United States--began trial operations in May and has provided Chinese scientists with more than 400 satellite pictures.

When it begins full service in November, the ten million U.S. dollar facility will provide Chinese and foreign clients with remote sensing data, satellite pictures and other services.

Senior leader Deng Xiaoping completed arrangements for the cooperative venture when he visited the United States in 1979. In December 1985, Chinese officials contracted with a private French firm, the Spot Image Corporation, to use its satellite's data. The Chinese Ministry of Astronautics has said it will launch its own land survey satellite by 1990.

The French satellite is sending data from 832 kilometers above the earth, while the U.S. satellite is positioned at an altitude of 705 kilometers. Both satellites cross the equator daily, enabling the station at any moment to receive data about an area 4,800 kilometers in diameter.

Altogether, the station can analyze information covering some 80 percent of China's total land mass of 9.6 million square kilometers--including nearly all of the country aside from some parts of Tibet and the Xinjiang Uygur Autonomous region.

To solve that problem, Zhang said, the Academy of Sciences is planning to build a second ground station in Urumqi, capital of Xinjiang.

In its trial operations, the station has provided the Shengli offshore oil field in northeast China with satellite pictures enabling it to develop a plan for economical drilling on land.

Zhang said data from the satellites will enable scientists to monitor floods as well as more effectively assess plans for public works. In addition, he said, the data will be useful in such fields as agriculture, forestry, marine engineering, city planning, and geology.

For example, he said, officials have already asked to use satellite data for surveys of uranium and other mineral resources.

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CSO: 5500/4131

PEOPLE'S REPUBLIC OF CHINA

RESOURCE SATELLITE LAUNCHED FROM JIUQUAN

HK120152 Hong Kong ZHONGGUO XINWEN SHE in Chinese 0847 GMT 11 Oct 86

["China Launches a Second Satellite for Surveying Terrestrial Resources"--ZHONGGUO XINWEN SHE headline]

[Text] Beijing, 11 October (ZHONGGUO XINWEN SHE)--After flying for five days in space, China's second satellite for surveying terrestrial resources returned to earth at 1220 today as scheduled.

The satellite was launched from the Jiuquan launch site in western China at 1340 on 6 October and was orbited as scheduled. The satellite's perigee was 180 km from earth and its apogee 400 km away. The satellite's orbit and the equatorial plane subtended an angle of 57 degrees. Each orbiting period was 90 minutes. During the five day flight, all parts and components of the satellite worked properly and the satellite collected much technical information that can be used in a general resources survey.

This satellite was the 19th satellite launched by China so far. However, it is the eighth retrievable satellite.

The satellite was launched from a "Long March 2" rocket, which has a length of 31 meters, a diameter of 3.35 meters, and a takeoff weight of 92 tons. This rocket is capable of putting a 2.4 ton satellite into orbit. Of the 19 satellites launched by China, 16 were launched from the Jiuquan launch site.

It is reported that the information collected by this satellite can be used in a survey of terrestrial resources, prospecting for mineral resources, water conservancy, environmental protection, and oceanographical and seismological research. As it did for the satellite launched in October last year for surveying terrestrial resources, the China Insurance Company also provided insurance service for the launching and retrieval of this satellite.

People in the field of astronautics told reporters that China has many times successfully launched different types of satellites with "Long March" rockets. This shows that China's carrier rockets are very reliable and that China has the capabilities to undertake satellite-launching business.

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CSO: 5500/4132

PEOPLE'S REPUBLIC OF CHINA

GUANGDONG OPENS CONFERENCE ON RADIO, TELEVISION

HK250747 Guangzhou Guangdong Provincial Service in Mandarin 0300 GMT 25 Aug 86

[Text] Our station reporter has learned from the Ninth Provincial Conference on Radio and Television Work which opened this morning that radio and television have developed rapidly in Guangdong in recent years. The proportion of the population now covered by wireless broadcasting and television is respectively 70 percent and 80 percent.

Since the previous conference on this topic in 1983, Guangdong has achieved gratifying success in radio and television work. The provincial broadcasting station now runs 6 channels for a total of 83 hours a day. The provincial television station runs 2 channels and also relays 1 channel of the central television CH station, for a total daily output of 34 hours. The province has also built 5 medium-wave stations, 29 city and county television stations, and 711 television transmitting and relay stations. Thirty-four of the 50 counties and cities allowed by the higher authorities to establish FM radio stations have now done so. Kaiping County was the first in the whole country to set up a television station and stereo FM radio station. Each county also has a wired broadcasting station. A radio and television propaganda network covers the urban and rural areas, contributing to the building of the two civilizations in the province.

/12232

CSO: 5500/413

PEOPLE'S REPUBLIC OF CHINA

HUBEI HOLDS RURAL BROADCASTING WORK CONFERENCE

HK230624 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 22 Sep 86

[Excerpts] Between 11 and 16 September, the province held the rural broadcasting work conference in Hefeng County. In connection with the spirit of the provincial government's instructions on rural wired broadcasting, the conference discussion particularly emphasized the building of, and propaganda work through, rural wired broadcasting.

Broadcast and television bureaus of Hefeng, Xianfeng, Tianmen and Yunxi counties and city briefed the conference on their experiences in developing rural wired broadcasting, producing their own programs, reforming their administration, and perfecting their broadcasting services.

In the course of meeting, Liang Shufen, vice governor, and Zhang Peng, deputy director of the provincial party committee made speeches. Zhang Jinxian, head of the provincial Broadcast and Television Department, delivered a work report.

In her speech Liang Shufen stressed: party and government at all levels must increase their understanding of the significance and roles of wired broadcasting. When developing broadcasting and television, we must emphasize the coordinated development of wired broadcasts and wireless broadcasts, radio and television. We must not only emphasize television but neglect broadcasting, or emphasize wireless broadcasting but neglect wired broadcasting. At present, the province has done poorly in wired broadcasting. Governments at all levels must make great efforts in this area. During the Seventh 5-Year Plan period, we should establish wired broadcasting stations at every township and greatly increase the number of speakers installed. This is an arduous task. Governments at all levels must further strengthen their leadership over the work of broadcasting and television. The capital investment in, and funds for running broadcasting and television should be included in their local capital construction projects and budgets. In addition, considering economic development and practical needs, they should increase the investment accordingly. The establishment of district and town broadcasting stations and setting up the stations should be put on their agenda. Financial, tax as well as industrial and commercial administrative departments should support the broadcast and television departments in running their service departments and other paid services properly, so that the broadcasting and television departments can use the revenue

to make up for the insufficient operating funds. Broadcasting and television departments at all levels must uphold reforms, strengthen their administration, and perfect their services. They should expand the coverage of central and provincial broadcasting and television programs, so that the masses can receive better program signals.

/12232

CSO: 5500/4133

PEOPLE'S REPUBLIC OF CHINA

SHAANXI RADIO NOTES NEGLECT OF RURAL WIRED BROADCASTING

HK240341 Xian Shaanxi Provincial Service in Mandarin 0030 GMT 24 Sep 86

[Short commentary: "Work Creatively to Consolidate and Develop Wired Broadcasting"]

[Text] In recent years, as a result of the increasingly extensive use of television sets, recorders, and receivers in the rural areas, some places have slackened management and development of rural wired broadcasting. This is a trend that should attract attention.

The information provided at the recent provincial forum on rural wired broadcasting, held in Qishan County, shows that wired broadcasting can still exist for a long time in the rural areas after wireless broadcasting and television have developed. At present and for a long time to come, wired broadcasting remains an effective tool for the county and township leadership organs to publicize policies and direct production. It is a bridge closely linking the cadres with the masses. Trends of neglecting wired broadcasting should therefore be promptly corrected. We must attach importance to consolidating and developing wired broadcasting in the rural areas.

Of course, wired broadcasting must continually introduce new technology, to create conditions for its own consolidation and development. The method applied by the broadcasting systems of Weinan and Meixian Counties in having the wired broadcasting stations serve a variety of purposes makes full and effective use of the broadcasting wires. Still more use of this creative method will help to speed up the development of wired broadcasting. We hope the comrades in the broadcasting system will engage in such creative work.

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CSO: 5500/4133



PEOPLE'S REPUBLIC OF CHINA

BRIEFS

**RADIO STATION INSPECTION**--At 1600 on 14 September, Governor Gu Xiulian and Vice Governor Yang Yongyi inspected the shortwave transmitter of the Voice of (Jinning) Radio Station, newly completed and to be put into operation soon. Governor Gu Xiulian heard a report by a responsible person of the radio station on the design and construction of the transmitter; installation and trial run of equipment; and the station's preparations for broadcasts. Governor Gu Xiulian expressed satisfaction over the work of the radio station. She said: We should have a long-term plan for our radio and television work and should set out goals for the Seventh and Eighth 5-Year Plans and by the year 2,000. In addition, all equipment and facilities should be modernized according to domestic or international standards. Governor Gu Xiulian also expressed satisfaction with the Jiangsu Provincial People's Radio Station broadcasts to Taiwan. She said: I often listen to the broadcast at 2300. The programs are quite good, and (Hai Ti) and others have done good broadcasting work. The two leaders then toured the transmitter building and went to the terrace atop the fourth floor to get a panoramic view of the transmitter towers and the surrounding countryside. Governor Gu Xiulian called on comrades of the station to pay attention to greening the surroundings and to environmental sanitation; she urged them to build the station into a garden. [Text] [Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 15 Sep 86 OW] /12913

**SHANDONG SATELLITE GROUND STATION**--A satellite television ground reception station for entertainment and educational uses has been built and made available recently in Binzhou City, Shandong Province. With one antenna, this station can receive the first program and the educational program of the Central Television Station simultaneously. Thus far, these two programs have been welcomed by the masses here. [Summary] [Jinan Shandong Provincial Service in Mandarin 2200 GMT 3 Sep 86 SK] /12913

**RADIO, TV GROUND RECEIVER**--Zhejiang Province's largest ground station for receiving radio and television signals transmitted by satellites was completed in Zhoushan areas on 8 September. Henceforth, people in the Zhoushan archipelagoes can directly receive six televised programs transmitted by the Central Television Station and the Zhejiang Television Station. [Text] [Beijing Domestic Service in Mandarin 1000 GMT 9 Sep 86 OW] /12913

**DAQING SATELLITE STATION**--Harbin, 17 September (XINHUA)--Daqing oilfield has completed construction of a multifunctional ground satellite station, which



can relay and receive telephone and television signals and computer data through international telecommunications satellites positioned above the Pacific Ocean. With its debugging completed, the ground station will soon be merged with the special satellite telecommunication network of the Ministry of Petroleum Industry, thereby modernizing Daqing oilfield's means of telecommunications. [Text] [Beijing XINHUA Domestic Service in Chinese 0016 GMT 17 Sep 86 OW] /12913

**SICHUAN'S SATELLITE GROUND STATIONS**--Chengdu, 18 September (XINHUA)--Up to now, Sichuan's Aba Zang Autonomous Prefecture has already built eight TV satellite ground stations. Last year, the State Council gave Aba Prefecture a set of TV satellite ground receiving equipment. After the equipment was put into operation, TV reception has been improved. Therefore, 10 of the 13 counties of the prefecture planned to build ground stations. Seven counties such as Hongyuan, Aba, and Nanping completed construction this year. Programs of the Central TV Station received by these ground stations are clear in picture, bright in color, and loud in sound. [Excerpts] [Beijing XINHUA Domestic Service in Chinese 0002 GMT 18 Sep 86 OW] /12913

**SATELLITE GROUND STATION**--Xinjiang has made rapid progress in its communication means. The Urumqi domestic satellite ground station, which was undertaken by the postal and telecommunications departments, officially started its operation on 8 July. From now on, Xinjiang has the advanced communication equipment of the 1980's. Since its operation, the satellite communication was first used in telephone communication and television broadcast. Now four telephone lines from Urumqi to Beijing and five from Beijing to Urumqi are routed through the satellite. According to Statistics, in August, 1,593 telephone calls were made through the four lines from Urumqi to Beijing, accounting for 16.31 of total telephone calls from Urumqi to Beijing during the month. The volume is better than that of wire telephone lines. This has eased the strained situation in long distance telephone calls to Beijing. [Excerpt] [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 29 Sep 86 HK] /12913

**NEI MONGGOL TELECOMMUNICATIONS GAINS**--Since the liberation of the PRC, Nei Monggol Autonomous Region has scored marked achievements in developing post and telecommunications networks. The region has shown a 14-fold increase in the length of postal routes and a 13-fold increase in the number of postal and telecommunication offices. To date, all sumus [towns] in the region have been connected with the postal routes and 93.8 percent of sumus have installed their telephone systems. Urban telephone ownership in the region has increased from 0.28 units per 100 persons to 1.47 units. At present, the region is vigorously building modern communications equipment. [Excerpt] [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 3 Oct 86 SK] /12913

**MICRO-COMPUTER TRACKING SYSTEM**--Urumqi, 9 September (XINHUA)--A micro-computer antenna automatic tracking system successfully developed by the Xinjiang Military Region's ground satellite communications station will solve the problem of deviation in satellite tracking. This new system will improve the automation and accuracy of tracking and will lower the cost by percent. [Excerpts] [Beijing XINHUA Domestic Service in Chinese 0105 GMT 9 Sep 86 OW] /12232

**OPTICAL FIBER DEVICE**--Shanghai recently developed a multiple channel transmission device using optical fiber. The device is capable of simultaneously transmitting three radio signals with only one piece of optical fiber. It can be either used solely for transmission of radio signals or for transmission of FM stereo signals. The development of this device opens a wide vista for utilization of optical fiber technology in radio broadcasting. [Summary] [Shanghai City Service in Mandarin 1000 GMT 23 Jul 86 OW] /12232

**HEILONGJIANG MICROWAVE TV STATION**--The transmission line for a microwave television station went into operation in Fuyuan County, Heilongjiang Province, in July this year. The station, which cost 500,000 yuan to build, has been broadcasting the Central Television Station's daily programs on a trial basis since September last year. [Summary] [Beijing XINHUA Domestic Service in Chinese 2346 GMT 7 Aug 86 OW] /12232

**OPTICAL FIBER COMMUNICATIONS**--Xining, 18 September (XINHUA)--An optical fiber telecommunications cable with a length of 15 km went into service today on the Qinghai-Tibet Plateau, the highest in the world. The first in northwest China, the line links the control center and a substation of the Longyangxia Hydroelectric Power Station on the upper reaches of the Yellow River in Qinghai province. The station has a capacity of 1.28 million kw and an annual electricity output of six billion kwh. China is able to produce complete sets of equipment for optical fiber communications, developed in the 1970's. Now, the total length of optical fiber cables in the country totals more than 400 km. [Text] [Beijing XINHUA in English 1523 GMT 18 Sep 86 OW] /12913

**TELECOMMUNICATIONS TRAINING CENTER**--The Beijing Post and Telecommunications Training Center was officially opened on Wednesday, marking an important step toward modernizing China's telecommunications. "The lack of qualified engineers and skillful workers is a key problem in the process of modernizing China's telecommunications," said Song Zhiyuan, Vice Minister of the Ministry of Post and Telecommunications, at the opening ceremony of the training center. "The center will play an important role in equipping Chinese experts with modern technology. It will also help to consolidate the ties between the telecommunications departments of China and Japan." According to existing Sino-Japanese agreement, the center will be provided with modern equipment made in Japan. For this purpose, the Japanese Government has contributed 2.2 billion yen (\$14.3 million), which was mainly used to buy advanced equipment such as a computer network and satellite communication equipment. The center will enroll trainees that include engineers in China's post and telecommunications enterprises and factories, officials and teachers. The trainees will update their knowledge and keep pace with the development of modern technology. [By Niu Qiuxia] [Text] [Beijing CHINA DAILY in English 10 Oct 86 p 3 HK] /12913

**COMPUTERIZED DISPATCHING SYSTEM**--Beijing, 11 October (XINHUA)--A micro-computer system, used to dispatch news in Chinese, passed state tests here today. Installed in the XINHUA News Agency, the system is able to transmit, on an average, 30 Chinese characters per second, 15 times the speed of facsimile, a method used since the 1950s. It has a story input, editing, revising, storage, dispatching and printing functions. Video display terminals have so far been installed in 36 newspapers and radio stations receiving XINHUA dispatches. Jointly developed by XINHUA and the Commission of Science, Technology and Industry for National Defense, the system was put

to use early this year. [Text] [Beijing XINHUA in English 1834 GMT 11 Oct 86 OW] /12913

PROGRAM-CONTROLLED TELEPHONE--Shanghai, 13 October (XINHUA)--The first 2,000-line program-controlled telephone exchange has been produced in Shanghai, China's largest industrial city, a local official announced here today. This success is claimed to have brought China's communications technology equal to the advanced world level of the 1980s. Up to now, China has had to import program-controlled telephone exchanges. The first Chinese made telephone exchange, produced by the Shanghai-based No 1 Research Institute of the Ministry of Posts and Telecommunications, will be installed in Beijing, China's capital. Production of more program-controlled telephone exchanges has already started, according to Liu Ximing, a deputy chief engineer, in charge of developing the first one. [Text] [Beijing XINHUA in English 1443 GMT 13 Oct 86 OW] /12913

UPGRADE OF SHANGHAI TELECOMMUNICATIONS--Shanghai, 17 August (XINHUA)--Telecommunications clients in Shanghai will soon be able to get the latest information on politics, economy, science and culture worldwide through computer terminals, a local official said today. Starting next month, the service will benefit enterprises, offices, research institutions, hospitals and other units. By then, the Shanghai long-distance telecommunications office will be connected with the world's major data banks through a data exchanger of the Itacable Company of Italy. Posts and telecommunications have been very much improved in Shanghai over the past few years, the official said. A sleep-aid paging system with a radius of 20 km has been installed and the city plans to add digital-type and English-language paging systems. [Text] [Beijing XINHUA in English 0127 GMT 17 Aug 86 OW] /12232

SHAANXI TELECOMMUNICATION TRUNK LINE--Xian, 4 September (XINHUA)--China's fourth telecommunication trunk line passed an acceptance check by the Ministry of Posts and Telecommunications in the capital of Shaanxi Province today. Formed by two 1,800-channel coaxial cables, the 501.7-km line from Zhengzhou, capital of central China's Henan Province, to Xian will also serve the electrification of the 1,759-km Longhai Railway, an east-west artery from Lianyungang in Jiangsu to Lanzhou in Gansu. Built in 21 months, the carrier will boost the telecommunication capacity between the two cities 80 times. In 1 to 2 weeks the cable will link the lines in north, central, east, and northwest China to constitute a network. [Text] [Beijing XINHUA in English 1009 GMT 4 Sep 86 OW] /12232

STANDARD TIME BROADCAST--Beijing, 4 October (XINHUA)--Chinese satellite technology is advanced enough to broadcast standard time and frequency with high accuracy through domestic satellites, reports SCIENCE AND TECHNOLOGY JOURNAL. The journal said time error is just one-billionth of a second, raising China's time service to advanced international levels. Standard time service is important to navigation, aerial prospecting of mineral resources, land surveying, offshore oil exploration, and earthquake and meteorological forecasting, the journal says. The technology was the product of the Chinese Academy of Meteorology, the No 3 Air Force Research Institute, and the Nanjing Communications Engineering Institute, and it has passed a technical appraisal by the State Bureau of Metrology. Satellite transmission of standard time and frequency is 1 million times more accurate than short wave time service, and has the additional advantage of larger coverage and long-distance transmission. [Text] [Beijing XINHUA in English 1539 GMT 4 Oct 86 OW] /12232

PHILIPPINES

GOVERNMENT BROADCASTING CHANGES SINCE FEB 86 VIEWED

Quezon City VERITAS in English 18- 24 Sep 86 pp 20-21

[Article by Ma. Socorro Naguit—"Gov't Media: A Test of Sincerity"]

[Text] **T**HE announcer puts the caller on the air. The voice is that of an old woman, and she says: "*Alam po n'yo, e. hindi po ako sang-ayon d'yan sa pagpunta ni Presidente Aquino sa Amerika.*" She is one of *Radio ng Bayan's* many outspoken callers. Another listener, male, calls in to say he favors selective repudiation of the country's foreign debt. Still another decries the Defense Minister's raising the Communist spectre a little too often of late.

Tuning in to *Radio ng Bayan* (918 AM) for the first time is like waking up a la Rip Van Winkle from 20 years of media repression and finding that a government station now actually airs views that might easily have constituted "subversion" under the Marcos regime.

The private media have, of course, for six months now enjoyed press freedom to the point where some quarters have begun to wonder whether there is not, in fact, too much of it this time around.

But government media? Who would have thought the likes of CCP founder Jose Ma. Sison, former NPA chief Bernabe Buscayno, and the whole caboodle of personalities branded by the previous regime as "enemies of the state" would one day beam at you from your TV screen, on Channel 4 at that?

Six months after the Aquino Administration assumed power, has President Aquino kept her campaign promise to "dismantle Marcos' propaganda machinery?"

Last week, an office called the Philippine Information Agency (PIA) sent *Veritas* a press release outlining the compo-

nents of a proposed "new government information system", presumably intended to replace the old one which the deposed strongman had used largely for propaganda purposes.

Benjamin Lozare, Jr., special assistant to erstwhile Information Minister Teddy "Boy" Locsin, Jr. and rumored as the person likely to be appointed head of the PIA, told *Veritas*. "During (then Information Minister) Cendana's time, *naghalo ang* political information and development-oriented information, often with the former crowding out the latter. In the process, the people were shortchanged. When the new Administration took over, the mandate was to dismantle the entire government propaganda machinery and just keep a small presidential press staff. That was our first option. But I thought (that set-up) wouldn't be responsive to the needs of a developing country like ours."

The second option, says Lozare, was "just to streamline the structure of the Office of Media Affairs and the National Media Production Center, and remove duplications of functions so that it would not be a case of 'same dog, different collar.' The third option, which we have proposed, is to have the Office of the Press Secretary as the presidential information staff, create a Philippine Information Agency which will focus purely on developmental communication needs, and spin off the broadcast component (Channel 4 and government radio stations) into independent foundations." Under Lozare's proposal, a Philippine Broadcasting Authority would be created to address the problems of the broadcast industry, while existing



government stations would be managed by a Philippine Broadcasting Foundation.

The proponents of the new government information system appear optimistic that their proposal will be approved and that the Executive Order creating the new system will be released by September 15.

Says Lozare: "Some people say it's impossible to create a government information system that will not tend to be used for political ends. But I think we can undertake 'political' projects without being partisan. Like we're putting out materials on the Con-Com, or say when we print the draft of the Constitution, that would fall under the political sphere, but we can do it without being partisan."

To drive home his point that PIA intends to put taxpayers' money to good use, Lozare showed us a 'sheaf of one-page information' materials prepared by the PIA even as it awaits the Executive Order that will formalize its creation. Called "Info-Aide" and printed in Filipino and English, these include basic information on typhoid fever, another on TB, a farmer's calendar identifying the best months for planting various crops, a guide to securing a driver's license (professional and non-professional), and the steps in registering a cottage industry with the National Cottage Industry Development Administration (NACIDA).

A working paper prepared by Lozare's group notes that in the past, "information needs of the people - required by them to participate meaningfully in the democratic process and to improve their quality of life - were not met." The working paper, which provides the rationale for Lozare's proposal for a new government information system, notes further that a number of barriers prevented information from flowing "as much and as fast as it should have."

Basic information policy (under the previous regime), says the working paper, "focused more on the molding of public opinion toward the unquestioning acceptance of government thinking." "Relationship barriers" were also present: "There existed a mutual distrust between the government and the people; the manipulative nature of government information led to a deterioration of the credibility even of public information officers concerned with development-oriented information; and relationship between the government and the media did not exactly foster the observance of the highest professional and ethical standards."

The working paper goes on to cite 'infrastructural barriers' to the flow of information under the previous dispensation. It notes the inadequate reach and distribution of media in the Philippines: newspapers are read by less than a third of the population, only 72 percent-77 percent of Filipino households own radios, only 16 percent-22 percent own television sets, and a big sector of the population, living mainly in the rural areas, remains unserved by the news media.

A key feature of the new government information system will be the setting up of information centers, which, says Lozare, will serve as one-stop centers that will give a community access to books, newspapers, magazines, government publications, films, vtr and sound-slide showings. "We call these 'People's Information Centers' and what we do is write all government agencies to send us brochures and other materials on their offices and programs so these can be available to the people. We've set up 20 of these so far."

#### PEOPLE'S TV-4

WITH the exception of US Sen. Paul Laxalt's bluntly telling Ferdinand E. Marcos that the time had come to "cut and cut cleanly," no single event could have finally jolted the strongman to the reality that his 20-year reign was truly at an end than the take-over of the government television channel by troops loyal to Gen. Fidel Ramos and Minister Juan Ponce Enrile. It meant, after all, that not only did Marcos no longer have the military solidly behind him, he had also lost his grip on a powerful component of his propaganda machinery.

But just how much has changed at Channel 4, re-christened People's TV-4 after its take-over in February?

Says Patsy Monzon, Channel 4 Deputy Broadcast Manager:

"Gone are the days when everything was centered on the former President and the First Lady, when Channel 4 would pre-empt a regular program to show the President or Mrs. Marcos speaking before this or that gathering or - any little event. For me this is very significant. This time, clearly there is respect for the viewers, so that whether it's a sit-com or a drama or cartoons that we're airing, we don't

just pre-empt a "regular" program (to show President Aquino.)"

Monzon cites the channel's coverage of President Aquino's visit to Jakarta and Singapore as a case in point. "In the past, as soon as the 'feed' came in, Channel 4 simply cut in and showed it. But in the case of the Singapore and Indonesia visit, it was planned that each channel would have its own exclusive in the sense that when the President left, either Channel 7 or 9 would cover it; on the other hand, when the President came back, we covered it live. In the past it was Kuwatro (Channel 4) all the time. Now, the policy of Maria Montelibano as head of Radio-TV Malacañang is to involve the other channels in such coverages. If you noticed, Tina Monzon-Palma anchored even if Channel 7 did not cover the event live. So now there is this cooperation with the other channels. We pool talents, and it's a very healthy atmosphere.

"As the government station, we see our role as informing the people of what's going on, what the government is doing for the people. We do this by way of our newscasts and public affairs programs. If you compare the number of hours that Channel 4 devotes to news, it's still far more than what the other channels have to offer," says Monzon. She rattles off Channel 4 public affairs programs: a delayed telecast of *Kapitan sa Maynila*, aired Mondays at 10 p.m.; Con-Com Highlights and profiles on Mondays, Wednesdays and Fridays; a comprehensive wrap-up of Con-Com proceedings at the end of the week; journalist Art Borjal's talk show, *No Holds Barred*, on Saturdays, and the monthly *Dialogue with the President*.

Coming up with the kind of programming that is expected of a government channel, however, is for the moment stymied by two ticklish issues: one, Channel 4's exclusive contract with Vintage Enterprises, which markets the Philippine Basketball Association (PBA) games coverage, and two, the pressure to "go commercial" or otherwise close shop, given the fact that Channel 4 is, according to Monzon, at present not getting a single centavo by way of government subsidy.

**Basketball station?** Monzon admits that right now "the PBA games coverage really screws up our programming." Under Channel 4's contract with Vintage, Channel 4 is legally bound to air the PBA games on Sundays, Tuesdays and Thursdays from 5 p.m. "until the games finish." "When the games go on over-time, we have no choice but to pre-empt regular programs

(including public affairs) for the day. In effect, the PBA takes up an average of 5½ hours each on the days they're played. So the question is, do we really want to give that much prime-time thrice a week to basketball? That's a question that we'll have to settle next year, after the present contract expires."

According to Monzon, the contract between Channel 4 and Vintage Enterprises had been signed by erstwhile Information Teddy Boy Locsin before she and Broadcast Manager Conrado Limcaoco, Jr. assumed their posts. While the new PBA contract earns P6.3 million for Channel 4 (last year's contract gave the channel a little over P3 million), Monzon says: "If you compute the air-time and the use of our facilities for the PBA coverage, we'd earn more by airing other programs instead."

As it is, the private TV stations are reportedly grumbling over the fact that Channel 4 is cutting into their share of the advertising pie.

Says Monzon: "Since July or August this year, Channel 4 has not been getting a centavo from the government. As the government station, we cannot just close shop. We're in a Catch-22 situation: as the government channel, we should be airing public affairs and educational programs, true, but at the same time, we have to admit that it's going to take a long time before the advertising industry will plunk money in a station that's not watched as much as other channels. For instance, if we were to air, say, a program on "How to Milk a Cow," on the same time slot as *Falcon Crest*, which would you watch?"

**A**T THE TIME of the interview, Monzon had not heard of the Lozare group's proposal to have a Philippine Broadcasting Foundation operate government radio and TV stations. "We've not been briefed on this. I really don't understand how this will work out. It's a beautiful idea, but it's very ambitious. I don't know whether in my lifetime, you can get people to watch Channel 4 if its programming is purely public affairs, purely educational. Of course it can be done if you have the resources. *Sesame Street*, for instance is educational and entertaining at the same time. But to do one animated 30-seconder would take you so many months of drawings and shootings."

Right now, Monzon admits, Channel 4 remains the least-watched station over-all. "It's very difficult to shed off the image

that the previous Administration left behind. We cannot be an overnight success, but what's important is that we aim high and I'm optimistic that we'll get there."

A step in the right direction is the plan to create a research group that "will set guidelines to see to it that Channel 4 programs are developmental and educational even as they are entertaining."

As Monzon puts it: "We have a role to play, but at the same time, we must see to it that we are watched."

## GOVERNMENT RADIO

"All government stations are now required to tell the truth no matter who gets hurt. We will no longer be used for propaganda purposes," says Jose Mari Gonzalez, one-time movie matinee idol and now officer-in-charge of Bureau of Broadcasts.

Since Gonzalez took over, the government's five Metro Manila radio stations (there are over 20 nationwide) have been re-programmed. "The former VOP or Voice of the Philippines is now DZRB or *Radio ng Bayan*. Its programming is 100 per cent public service, and it's on a 24-hour broadcast. We get callers from the CD sector from early morning to afternoon, while the A and B crowds call in the evenings. We don't discriminate against a caller on the basis of political or whatever reason. We had Fr. Balweg last night; we even have NPAs calling us, or at least so they say," says Gonzalez proudly.

The government's four other stations in Metro Manila have specialized: the former DWIM (an FM station) is now DWBR or *Business Radio*; *Radio Pag-asá* specializes in science tips; DZSP, or Sports Radio features sports events from *puntakasi* (cock-fights) to *sipa*; and *Radio ng Masa*, caters exclusively to the masses.

"I've been reminding people here that they don't belong to the government, they belong to the people. It's the people who pay their salaries," says Gonzalez, who told *Veritas* that he recently resisted attempts of a provincial governor and one other politician to run the government radio station in their bailiwick. "We're even getting strongly-worded letters from government officials who ask why we allow KBLs to air their views on our stations. But we tell them, you cannot just air one side. We're now maintaining an independent posture."

Gonzalez, like Channel 4's Patsy Monzon, has not heard of the proposal to place the management of government radio and TV stations in the hands of a Philippine Broadcasting Foundation. Under the proposed set-up, the Foundation's financing

options would include commercial advertising. Says Gonzalez: "For me, for a government station to go commercial is immoral. Only a radio station that does not take in commercials can be neutral."

According to Gonzalez, Fr. Lagerway of the Communication Foundation for Asia wrote him sometime ago, proposing to buy one of the government's radio stations. "I said no way. You know what will happen if the government stations are sold to the private sector? Our listeners will march to Malacañang. The reason we're popular is we don't have commercials."

If the sentiments expressed by two senior staff members at the Bureau of Broadcasts are any indication, all is not exactly hunky-dory at the government radio stations. Said one: "These people who have taken over the stations have been behaving as though they had a monopoly of truth and patriotism. The fact is that many of us were openly campaigning for Cory, and as a consequence our names were included in a white paper prepared by Cerdania's boys. Now these new people take away rooms and office equipment as they please." He has a particularly serious charge against Gonzalez: "We now play mostly G-records." Gonzalez is president and general manager of G. Records International, Inc. Gonzalez reply "That's a big lie. What I've instructed them is to play only Filipino-produced records, whether in English or Tagalog, on our stations. As a matter of fact, my artists' records are played more on commercial stations."

Another Bureau of Broadcasts employee told *Veritas*: "He's very indecisive and he has the habit of hitting people behind their back. And the claim that all callers are welcome to express their view is not true, because *pag Marcos Loyalist hinahara*". Whether such sentiments are merely a case of sourgraping from disgruntled holdovers from the previous Administration, or are legitimate charges, is something that Gonzalez must clearly look into, if government radio's attempts to chart a new course are not to be derailed by management problems.

On the whole, it looks as though the Aquino Administration is determined to put government media to better use than to advance political ends, as the Marcos Administration did with impunity. Whether the new government can do better than key Channel 4 as a basketball station, government printing facilities and information personnel as propaganda mills and government radio as the Voice-of-the-President, however, will be one more test of its sincerity.

HUNGARY

# TELECOMMUNICATIONS RESEARCH, DEVELOPMENT VIEWED

Budapest MAGYAR TUDOMANY in Hungarian No 5, 1986 pp 329-338

[Article by Gyula Tofalvi, scientific director of TAKI (Telecommunications Research Institute): "Telecommunications and Teleinformatics Research and Development in Hungary"]

[Text] Never before was there an example of the unity and harmony with which the experts of Hungarian telecommunications worked for their common goal as in 1979-80 when they sought the goals of our telecommunications research and development for the Sixth 5-Year Plan. I do not say that this cooperation was perfect--indeed, I will return to the problems in detail later--but it did prove more efficient and effective than ever before. It is sufficient to illustrate this by citing the line-up of the participants in the program developed for the Sixth 5-Year Plan:

Figure 1. The Line-Up for OKKFT-A/5 and OTTKI-K8, 1980-1985.

Ipm--OMFB  
The Hungarian Post Office  
BME--MuPKI--TKI--PKI--KKVMF  
BHG--BRG--FMV--HTV--MEV--Orion--Terta  
Budavox

(OKKFT, National Medium-Range Research and Development Plan; OTTKI, National Long-Range Scientific Research Plan; Ipm, Ministry of Industry; OMFB, National Technical Development Committee; BME, Budapest Technical University; MuPKI, Technical Physics Research Institute of the Hungarian Academy of Sciences; TKI, Telecommunications Research Institute; PKI, Postal Experimental Institute; KKVMF, Kalman Kando Electric Industry Technical College; BHG, the BHG Communications Engineering Enterprise; BRG, Budapest Radio Engineering Factory; FMV, Precision Engineering Enterprise; HTV, Communications Engineering Enterprise; MEV, Microelectronics Enterprise; the Mechanical Works; Orion Radio and Electric Enterprise; Terta, the Telephone Factory; Budavox, the Budavox Communications Engineering Foreign Trade Enterprise.)

The guiding principle in our work, even when working out the program, was that we should fit research and development primarily to the need to develop the Hungarian telecommunications network, naturally taking into consideration also



that the new product structure of our telecommunications industry should also correspond to the needs of export.

Even the titles of the programs were intended to emphasize service to development of the Hungarian telecommunications network:

OKKFT-A/5: "Research and Development on Telecommunications Systems, With Special Regard to Development of Systems";

OTTKT-K/8: "Research and Development on Communications Systems and Equipment."

By this time also a favorable change had taken place which resulted in successful cooperation between the Hungarian telecommunications industry on the one hand and the Hungarian Post Office and the university research sites on the other.

#### Research and Development Strategy and Conception in the Years 1981-1985

We based the strategy of the research and development program we worked out for the years 1981-85 on three chief factors: microelectronics, digitalization and the adoption of new professional cultures.

Microelectronics offered telecommunications--as it did for the other areas of electronics--the possibility of an entirely new epoch. This possibility demanded substantive changes everywhere from circuit design to building equipment, systems and networks.

Digitalization meant the end of one great period (analog) and the beginning of another even greater (the digital period). In its methods digitalization offered much richer possibilities than before resulting in an improvement in reliability of an order of magnitude, bringing epochal progress in its transmission characteristics and the realization of a telecommunications more economical than ever before.

The adoption of new professional cultures meant for us primarily the start of research and development connected with optical telecommunications and space telecommunications. We might also list here the use of new frequency domains, increasing the speeds of signal transmission and goals formulated in the area of signal processing, speech analysis and speech synthesis.

A number of other factors figured as conditions in working out our research and development program for the Sixth 5-Year Plan; these were consequences of the already mentioned strategic goals or their importance affected only some areas of telecommunications engineering. A few of these were: network integration, services integration, the convergence of telecommunications and computer technology, the integration of electronic parts and equipment and the convergence of broadcasting and telecommunications.

We performed the research and development done within the framework of OKKFT-A/5 in three coordinated subprograms: a. systems technology, b. switching technology and c. transmission technology research and development.

In the systems technology subprogram we gave priority to complex, digital telecommunications networks for subscriber, rural and suburban areas and to expanding the services of telecommunications networks. In the area of switching technology the stressed tasks were stored program controlled electronic subexchanges, computer based automatic equipment for monitoring and maintaining exchanges, and taking over and adapting subscriber, extension and main exchange licenses. In transmission technology the chief tasks were development of regional and main line, wired and wireless, analog and digital transmission systems and equipment and taking over and adapting licenses to expand digital solutions.

Those who are better acquainted with the structural system of the telecommunications network of a country will immediately recognize the deliberate conception which unfolds in the wake of the foregoing priorities, primarily the fact that a comprehensive effort was being made to develop the Hungarian telecommunications network. If we add the research and development done within the framework of the long-range OTTKT-K/8 program then we get a full picture of the result of the common work mentioned in the introduction.

The research and development done within the framework of OTTKT-K/8 had six main themes:

1. systems engineering and systems technology,
2. switching technology,
3. wired transmission technology,
4. wireless transmission technology,
5. radiotelephone technology, and
6. subscriber end-equipment technology.

From the beginning we considered the harmony of the programs to be a first order requirement. Our goal was for the OTTKT-K/8 program to serve primarily preparation for the research and development of the future.

We planned to turn a total of 2.7 billion forints to telecommunications and teleinformatics research and development work, to investments connected with it and to the purchase of licenses. This was divided up as follows: 2.3 billion forints for OKKFT-A/5 and 0.4 billion forints for OTTKT-K/8. The planned ratio of central and enterprise sources was 31/69 percent.

#### Results of the Sixth 5-Year Plan Period

On the basis of the results achieved between 1981 and 1985 it is my opinion that--despite all the unexpected braking and deterring factors--this period of our telecommunications and teleinformatics research and development was a creative, successful and effective period. We developed systems, systems component equipment and procedures which ensure suitable domestic products for the liquidation of the serious backwardness of the Hungarian telecommunications network, gradual digitalization and further development of the domestic network and a renewal of the export product structure of the domestic telecommunications industry. I must stress the results we achieved in the area of digitalization, use of microelectronics and introduction of new professional cultures.

Of the factors holding back progress I judge the following three to be most serious:

--As a result of the conditions of our industrial environment and of the situation of our national economy between 1981 and 1985 conditions developed over the past 5 years in the supply of primary materials, parts, technology and tools of production which are worse than ever before;

--The restrictions piling up with the worsening of the international situation prevented our being able to obtain and put into production in the planned time frame the license for a stored program controlled, digital main exchange;

--During the past 5 years we were unable to see to it that the comprehensive, systematic development of the Hungarian telecommunications network got priority and a system of suitable conditions.

The effectiveness of the "cooperation with a common goal" mentioned in the introduction is proven by the fact that the community realizing the program (Figure 1) not only paid attention to seeing that it corresponded to the network, system and equipment engineering requirements but also had the strength to find solutions to such questions as:

--the quantitative and qualitative further development of the university teaching and research base;

--a further development of the preparedness of the experts working in industry, as required by the technological generation change;

--aiding the publication of Hungarian and foreign language telecommunications and teleinformatics books;

--developing a coordinated university, college, institutional and industrial position in connection with national programs; etc.

It is not possible in such a short article to review the many results achieved in the area of systems, equipment, procedures, etc. and in the basic research preparing for the research and development of the years ahead. I can restrict myself to merely listing a few examples, but I feel that these will be able to characterize the effective work which took place here in this area in the past 5 years.

**Systems technology:** The Time Sharing Subscriber Radio Network System to link groups of subscribers in sparsely settled areas, with scattered locations and little traffic, into the national public telephone network. I might also mention the land-line PRS or the radio CLS system.

**Switching technology:** The family of telephone subexchanges with a capacity of 16-100 extensions using microcomputer, stored program controlled, time sharing switching fields. The equipment solution chosen and the digital structure provide an obvious opportunity for links to PCM connections with a small number of channels, and thus for integration of switching and transmission services at the lower levels of telecommunications networks, in the final

analysis for their use in Integrated Service Digital Networks. I might also mention the results achieved in the areas of centralized monitoring systems, rural exchanges, etc.

**Transmission technology:** Analog radio relay equipment operating in the 4-6-7-8 GHz frequency ranges using third generation technology and uniform systems engineering for main line or area network transmission of 960-1,800 FDM telephone channels, images and accompanying sound or data information with the same band width. An analog system, metal conductor, carrier frequency, transmission technology connection system with a new generation of multiplex and line span equipment, with capacities in the 12-2,700 telephone channel range. I might also mention the results achieved in the area of transmission at 34 M bits per second signal speed.

**Optical telecommunications:** Equipment for a PCM tertiary speed, light conducting transmission system operating at a wave length of 950 nm to establish urban links. Of significance equal to the foregoing are the research and development results in atmospheric optical transmission.

**Space telecommunications:** Modern fixed channel division telephone channel generating equipment using the digital principle which can be operated with both PCM and ADM channels to improve the telephone traffic properties and services of the Intersputnik artificial satellite telecommunications system, with Intelsat compatibility.

**Basic research:** Research on the possibility of realizing signal transmission speeds of 140 M bits per second, in preparation for research and development work on metal and light conducting and radio relay connections; research on applications questions and problems in the 1.3-1.6 micron optical wave lengths and in microwave frequency bands above 10 GHz, in preparation for equipment research and development.

Together with the achievements we must also talk about our failures:

--As I already mentioned, we were unable to obtain a license for a stored program controlled, digital main exchange. This fact significantly reduced the comprehensive character of our telecommunications and teleinformatics research and development program and thus the possibility of the economic realization of the program.

--We were not able to perfectly coordinate license purchases by the several enterprises. There are as many sources as there are licenses! We must bear the technical and economic consequences of this for years (design, parts and technological heterogeneity).

--The immediate introduction into manufacture of the results achieved was not realized in every case. In more than one case those doing the research and development had to manufacture the first copies of the systems or equipment. Giving up the continuity of research and development, breaking it into phases, is a serious consequence of this. The source of the problem is the lack of comprehensive planning and organization of the complex production process, the realization of the innovation process at a number of bases with different interest systems.



--We cannot be satisfied with the results we achieved in the past 5 years in the area of standardization.

--Our forces and assets are divided up in some theme areas. More time than allowable is necessary to solve the tasks selected, more time than our available forces and assets would otherwise make possible.

--The braking effect of the low level background industry frequently slows our research and development.

--We were able to make virtually no progress in the area of socialist international cooperation. The cooperation which was achieved with capitalist countries is far less than we need given our conditions. We can attribute primarily to this the fact that we were not able to make that selection in our research and development program which would have better suited our forces and assets.

#### Prospects for Our Research and Development

When selecting the communications engineering goals for the Seventh 5-Year Plan and working out the program we had and have tasks of a different character than at the time of preparing for the Sixth 5-Year Plan.

Then microelectronics was still treated as a "miracle", we expected much more from it than we should have; our decisions connected with digitalization meant essentially saying farewell to our entire previous life and beginning a completely new life; the great dilemmas of introducing new professional cultures were resolved in the fire of broad debates lasting for months.

Now our chief tasks are primarily repeated review of the new goals selected in 1979-1980, making the necessary corrections and uniting as far as possible the efforts which are diverging with elemental strength.

In regard to the goals selected and the research and development forces and assets at our disposal we have fallen under contradictory influences. A smaller part of the research and development forces have left us in the meantime--in the wake of great social opportunities--and a large aging generation is saying its farewells in the area of telecommunications. The young people arriving at the same time will be able to take the place of their knowledgeable and experienced predecessors with the same value only after a time. When selecting a number of goals which could not be neglected we struggle with a shortage of experts despite the fact that the necessary research and development forces do exist in the country; unfortunately they are scattered. We have only one solution--we must put more confidence in the young people and assume all the consequences of doing so. So, attaining the goals selected will require the growth of the research and development guard, already outstanding by international standards, will require either a more comprehensive selection or a concentration of forces and assets.

The situation is similar in regard to assets. Our assets have increased and become richer in recent years, but considering the development of the electronics culture, the swift growth of requirements and the research and

development goals selected the level of our assets supply is substantially lower than would be absolutely necessary for work of such content and complexity.

It is entirely our own fault that in some theme areas the forces and assets available to us in the Seventh 5-Year Plan period will be available only in a dispersed fashion. As a result of this the research and development capacity, outstanding as a whole even by international standards, represents a substantially smaller force than would be possible considering the total numbers.

We are already late in starting up our program! For two years, in 1979-1980, all participants in the program starting in 1981 worked together, partly on the technical-economic definition of the tasks and on the distribution of labor in execution and partly on preparations to start up the program. Now, after the beginning of the Seventh 5-Year Plan, even today, we have not gotten so far along as to be able to exchange ideas together (!) even once. Even the preparation of the 1985 annual program took place at "limited meetings." Not once have we had a common, comprehensive debate. Thus it could happen that when the OMPB convened the first communications engineering meeting at the end of January 1986 the enterprises took exception one after another saying that they were unacquainted (!) with the content of the OKKFT G-1 program worked out for the Seventh 5-Year Plan.

Thus it could happen that at the first group meetings after the start of the 5-year plan period the chief task continued to be to eliminate from the inadequately prepared program the redundancies, superfluous parallelisms, themes serving the aspirations of some narrow groups, etc.

It is the beginning of February as I write down these ideas.

Virtually everything has changed in regard to the telecommunications-teleinformatics program compared to previous years. The patron of the program, the order developed thus far for coordination of the program and, what is the biggest problem, the form and content of the joint work done thus far, all have changed.

Coordination of execution of the telecommunications-teleinformatics program will take place in a partitioned way, broken into themes, probably in 5-6 groups. In this sort of system the participants will see primarily the telecommunications "bricks" and will see the "telecommunications house" only in part. It is true that there is an advantage to the present system in that several times a year those telecommunications experts who participate in the work of the top committees can look at the surface of the research and development taking place in the area of computer technology and automation, but in exchange they give up the regular, comprehensive meetings, debates and conversations of telecommunications experts. In my opinion telecommunications coordination taking place in 5-6 groups is another victory for partial thinking!

We had a good system and good coordination earlier. Everyone recognized this during the past 5 years. Instead of our thinking about how we might solve the still unsolved problems connected with the plans we started up a completely

new form of coordination--and did so late. The "cause" will suffer for this. (I ask my dear readers to accept or reject the objectivity of my statements in the knowledge that up to now I was program commissioner for OKKFT-A/5 and OTTKT-K/8.)

I completely agree that the OMFB should comprehensively coordinate the electronics program. Considering that applications have become one of the souls of the program there could be no better solution! But! The partial view was again victorious when the OKKFT G-1 and GFP were assigned to the OMFB while the EKFP [Central Electronics Development Program] dealing with electronic parts and the OKKFT G-5 were assigned to the Ministry of Industry. It would be difficult to find a line-up more irrational than this! This way the OMFB can cover only part of electronics, and the Ministry of Industry also. Whom does this benefit? It is harmful! It is very harmful that at the beginning of every 5-year plan we must start virtually ab origine. It is harmful that our relays are not continuous and that we make new problems for ourselves at the divisions.

The strategy for Hungarian telecommunications and teleinformatics research and development and the chief directions for its development were decided for the long range in the course of the broad debates preceding the Sixth 5-Year Plan period, determining also the research and development strategy and the chief directions of development for the years 1986-1990.

Even today we can designate the following as our chief goals:

- the primacy of systems and networks,
- development of the Hungarian telecommunications network,
- a new and more exportable product structure,
- the integrations and convergences already formulated in the Sixth 5-Year Plan programs,
- analog-digital compatibility,
- development of an Integrated Services Digital Network,
- creation of automated networks not requiring supervision,
- expanding microwave frequency ranges and optical wave length ranges,
- increasing the speeds and capacities of information transmission,
- expanding and integrating telecommunications services,
- adapting a culture for stored program controlled, digital main exchanges,
- system and equipment designs based on computer technology,
- research and development serving, aiding and laying the foundations for international cooperation, and
- basic research in preparation for research and development in the years 1990-2000.

Here are only a few main themes among the tasks for the Seventh 5-Year Plan period:

Network planning and operation: computer aided design of telecommunications networks, with special regard to expanding and integrating services; optimization; preventing overloading; new man-machine links; reducing the live work needed for operations.



**Systems technology:** increasing the capacity of systems started in the Sixth 5-Year Plan period, expanding them with new services, extending their applications areas, expanding their operational ranges, making use of new frequency ranges, integrating telecommunications and teleinformatics services; artificial satellite information transmission; extending free channel access; expanding packet communications; expanding space telecommunications services.

**Narrow band service expansion and service integration:** developing equipment and operating program systems for a narrow band digital base network; teleinformatics services; teledata services; aiding the building of an integrated digital data network; local computer network type services.

**Switching technology:** taking over and adapting a license for a stored program controlled, digital main exchange; research and development on subexchanges and rural exchanges in harmony with this; further development of computer network, centralized operations systems.

**Transmission technology:** continuing research and development on a digital multiplex family with a signal speed of 0.7-140 M bits per second; ensuring transmission at such signal speeds in metal and light conducting and radio systems; cultivation of the 0.8-1.6 micron wave length range and expanding optical telecommunications services; modems and multiplexers for data transmission; expanding the frequency range to 20 GHz; modern autonomous and auxiliary ultra short wave radio networks operating in VHF and UHF frequency ranges; cellular radio communications.

**End-equipment technology:** subscriber end-equipment; residential and office terminals; microcomputer telephone devices; dispatcher equipment.

**Basic research:** research on information transmission and systems theory; optical transmission in the 2-10 micron wave length; use of the 20-40 GHz frequency range; optical signal processing; new optical devices; starting optical transmission at a signal speed of 560 M bits per second.

#### **Development of the Domestic Telecommunications Network**

I emphasized in the introduction that even when working out the R and D program for the Sixth 5-Year Plan we turned special attention to systems, equipment and solutions required for the development of the Hungarian telecommunications network. Throughout the Sixth 5-Year Plan period we coordinated our every essential step with experts from the Hungarian Post Office, so I can even say that the experts of the Hungarian Post Office participated directly or indirectly in the development of all our research and development achievements. They were members of the OKKFT-A/5 and OTTKT-K/8 Program Council, of its Experts Council and of the experts councils for the subprograms and we invited them to our limited experts debates, exhibits and report meetings. It is thanks to this creative cooperation that the product structure which developed in the years between 1981 and 1985--together with systems and equipment developed before 1981--was able to cover more than 80 percent of the systems and equipment figuring in the network development plan of the Hungarian Post Office for the years 1986-1990. It appears that a significant proportion of the missing 20 percent can be obtained from socialist countries.

Just as the experts of the Hungarian Post Office aided our research and development so we participated in those debates and conferences which served to work out the developmental conception for the Hungarian telecommunications network up to the year 2000. At the debates and conferences held in the Academy special committees, in the OMF, in the MTESZ [Federation of Technical and Scientific Associations], in limited expert circles, etc. it was always my personal opinion that going beyond the three version network development proposal worked out by the Hungarian Post Office a fourth version, which no one dared work out, might be suitable for solving the network development problems of the years ahead (Figure 2). Taking into consideration our economic and social development and the restrained network development practice of past decades it might be desirable to have a fourth version which could liquidate our existing serious backwardness within a foreseeable time. I say all this with a knowledge of the present situation of our economy! Indeed! I say it precisely in the interest thereof!

Life has justified the experts of the Hungarian Post Office! The government decision at the end of 1985 could accept only the second version of the three versions submitted by the Hungarian Post Office, a version representing a medium developmental dynamic, creating a theoretical possibility that development might be accelerated by bringing in additional outside sources. Figure 3 well illustrates the consequences of the second version according to which we have accepted that--if it is not possible to bring in additional sources--the number of unsatisfied needs will increase during the next 5 years by about an additional 100,000. I feel that there is no need to emphasize the social and economic effect of this.

In the past an unfounded charge has been repeatedly made that the Hungarian electronic equipment manufacturing industry is the cause of the backwardness of the Hungarian telecommunications network. A manufacturing branch which exports almost two thirds of its production--even looking back a decade--would have been capable at any time of satisfying the needs of the Hungarian Post Office, supplying 70-80 percent of the necessary products, if there had been solvent demand and an appropriate incentive system for it.

The past 10 years' export of the five telecommunications enterprises gathered into Budavox and their export plans for the next 5 years clearly show how Hungarian industry and Hungarian made telecommunications systems and equipment aid the network development of socialist countries (e.g., Czechoslovakia). Czechoslovak network development provides an example of how supplies far exceeding the level of the Hungarian telecommunications network can be provided in a country with the aid and cooperation of the Hungarian telecommunications industry. Let me only note that when we judge the background industry role of the Hungarian communications engineering industry we must consider in addition to the export of the five Budavox enterprises the delivery capability of Videoton, the HTSZ [Communications Engineering Cooperative], the TKI, the MM [Mechanical Works], etc. A few years ago we celebrated the export of the one millionth line, and at the same time in our own country the decades old serious backwardness increased, the cause of which is not the Hungarian Post Office! The Hungarian telecommunications network can develop only as fast as the conditions for it are provided to the

Hungarian Post Office. Naturally the Hungarian telecommunications industry is not capable of overcoming the backwardness of many years in a single year or the shortages of decades in one 5-year plan cycle.

#### A Closing Thought

The question of why we are not always capable of living at the level of our own possibilities must be posed primarily to ourselves.

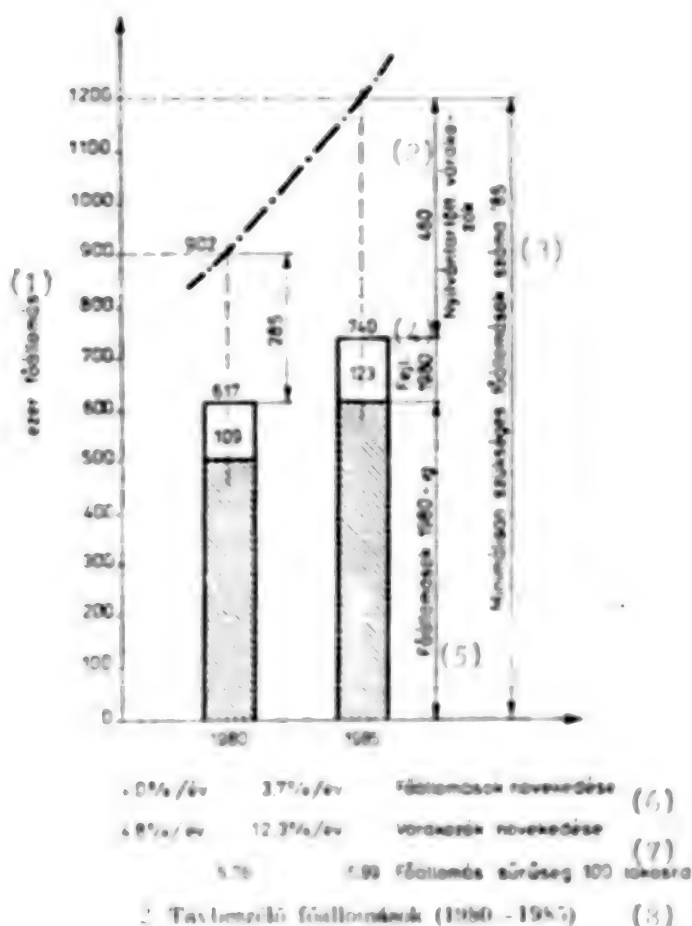
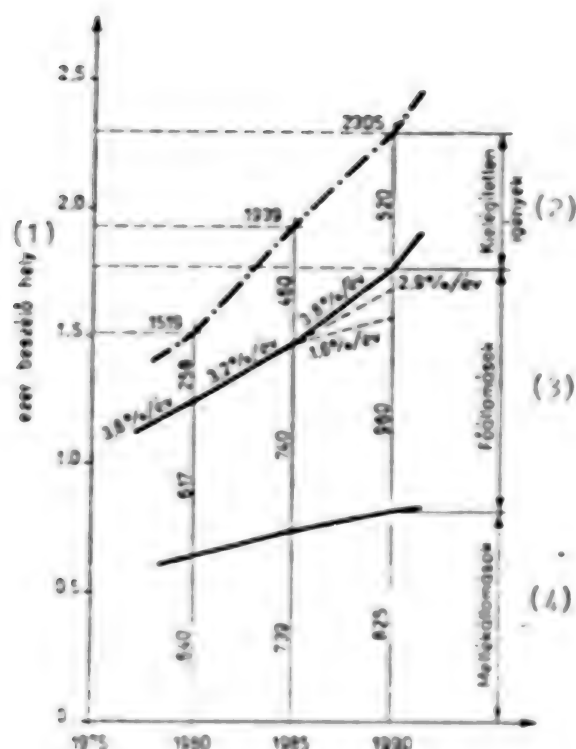


Figure 2. Subscriber Telephone Main Stations (1980-1985)

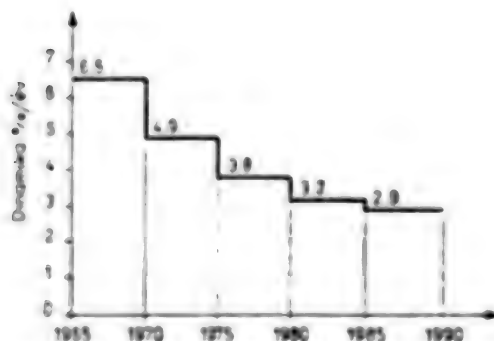
1. 1,000 main stations
2. Recorded number waiting for installation
3. Minimum number of main stations needed in 1985
4. Increase during 5 years
5. Main stations as of 1980
6. Increase in main stations, 4.0 percent per year, 3.7 percent per year
7. Increase in number waiting, 4.8 percent per year, 12.3 percent per year
8. Main station density per 100 inhabitants, 5.76, 6.99



3. Fő- és mellékállomások (1980-1990)

Figure 3. Main Stations and Extensions (1980-1990)

1. 1,000 telephones
2. Unsatisfied needs
3. Main stations
4. Extensions



4. A hazai fő- és mellékállomások fejlődési dinamikája

Figure 4. Developmental Dynamic for Domestic Main Stations and Extensions  
Dynamic expressed in percent per year.

INTER-AMERICAN AFFAIRS

SATELLITE OFFICIAL COMMENTS ON CARIBBEAN USAGE, POTENTIAL

Bridgetown BARBADOS ADVOCATE in English 11 Sep 86 p 6

[Text]

PORT-OF-SPAIN, Trinidad, Wednesday (AP) — The head of Trinidad and Tobago's Government satellite facilities said last weekend that countries in the English-speaking Caribbean are not fully using their technical capacity for the exchange of programming.

In informal remarks to news reporters, Mr. Lennox Worrell, general manager of Trinidad and Tobago External Telecommunications Company (TEXTEL), said there is no reason why significant events in Jamaica, Barbados or Trinidad cannot be simultaneously telecast in at least those three countries.

**Live telecasts**

Several other countries have the capacity to receive live telecasts, Mr. Worrell noted. Remaining countries could get copies by air express for next-day broadcast, he said.

The Textel manager blamed lack of will on the part of regional institutions and organisations for the low level of interest in the exchange of program-

ming. He admitted that for successful exchange, there must be adequate production of material of interest to the different countries in the region.

But the excuse put forth, he says, has often been money — the supposedly high cost of producing and exchanging programmes.

The idea of binding the Caribbean into closer union through the mass media has long been advocated by regionalists, and is acknowledged in the treaty setting up the Caribbean Community (CARICOM).

In his remarks, Mr. Worrell also expressed concern over the emergence in the United States of commercial satellite systems which he said may cripple the international satellite system (INTELSAT) by reducing rates to attract subscribers. Intelsat is owned by a group of 110 countries throughout the world.

In addition, the telecommunications manager mentioned fears voiced in some quarters that programming from the United States can weaken Caribbean cultures.

/9274  
CSO: 5540/009

INTER-AMERICAN AFFAIRS

BRIEFS

NEW CANA SERVICE--The radio division of the Barbados-based Caribbean News Agency (CANA), in collaboration with the United Nations, has launched a new service for regional radio stations. For the next 14 weeks, the two-year-old Canaradio will feed a 15-minute un-produced Caribbean news roundup to over 20 regional stations which have signed up for the service, according to marketing manager Carlton Proute. The weekly service coincides with this week's start of the 41st session of the United Nations General Assembly. Stations expected to subscribe to the service are in the Windward and Leeward Islands, Barbados, Trinidad and Tobago, Jamaica, Bermuda, The Bahamas, the Turks and Caicos, the Cayman Islands and Guyana. The service will last for the duration of the general assembly. [Text] [Bridgetown BARBADOS ADVOCATE in English 22 Sep 86 p 1]  
/9274

CSO: 5540/009

BELIZE

#### TV-STATION LICENSING PROCEDURES CRITICIZED

Belize City THE BELIZE TIMES in English 21 Sep 86 p 1

[Text] Television operators representing at least eight TV stations are protesting in the strongest possible terms the conditions of licenses to operate their privately owned stations.

The operators appear to be particularly concerned over Mr Nestor Vasquez' of Belize City TV 7--a close confidante of the Prime Minister. Mr Vasquez' is also the only TV operator who sits on the Belize Broadcasting Authority Board.

In a letter to the Prime Minister, signed by five of the eight TV operators who received licenses in August, the operators "take exception to the inordinate amount of adverse influence he (Vasquez) can exert on his business competitors as Chairman of BTA and find it impossible to believe that the impartiality of the Board will be preserved where such conflict of interest exists."

The TV operators also take objection to the exorbitant rates charged by the Broadcasting Authority and the "blatant censorship and unjustifiable control of television in Belize." They refer to a condition for licence which requires them to submit to the Authority, their weekly programmes seven days before the programme is aired.

Another area of contention lies in the broadcasting of news which the TV operators find "suited to the convenience of those with 'connections' in Belize City."

In his usual dictatorial style, the Prime Minister has replied to the TV operators to the effect that the conditions of licences wrested on the Authority and TV operators are in no position to have any input in the decisions of the Authority. PM Esquivel further expressed that the operators had no cause to be discontent! Talk about freedom of the media.

/9274  
C50: 5540/010



BOLIVIA

MODERN ELECTRIFICATION SYSTEM COMES TO PROVINCE

La Paz EL DIARIO in Spanish 20 Sep 86 p 6

[Text] On the occasion of the Virgin of the Assumption Day commemoration on 12 August and amid a display of enormous happiness, a modern electrification system was inaugurated in Chuma, capital of our department's Munecas Province.

The completed project cost approximately \$35,000, 80 percent of which was financed by Engineer Daniel Riveros Gamez, the well-known Bolivian businessman. He donated a brand-new modern generator set with a capacity of over 9,000 electric lamps. Town residents, through the Hector Enriquez B. Pilgrims Brigade, contributed 15 percent of the project's total investment, while other residents donated the remainder 5 percent. This shows that such an important project was a joint effort.

Engineer Daniel Riveros made official delivery of the electrification system in the presence of civilian and religious authorities and all the people that attended the ceremony. In his speech, Riveros referred to the neglect in which towns of the department find themselves, particularly Chuma, whose most pressing needs are not taken care of by government authorities. He said that he felt special satisfaction in delivering this project, which is the result of a joint effort between him and the pilgrims organization headed by Santiago Alcazar R. He added that the brigade was the forerunner and executor of this project, which the people of this area of our homeland had wanted for so long. He also made special mention of the cooperation received for the installation of light poles, which was the unskilled help provided by local residents. "This project shows what the people of Chuma can do and I am proud to support such efforts," he concluded.

For his part, Froilan Riveros, senior commander of the Pilgrims Brigade, said his organization once again identifies itself with its people by contributing to a new project that will benefit some 200 families with the essential electric power service. The Pilgrims Brigade representative praised the great cooperation and unselfishness of Engineer Daniel Riveros, whose gesture should be emulated by many of the country's businessmen. Lastly, he urged the townspeople and persons of good will to continue their cooperation with the brigade to tackle new projects which in the end will be of direct benefit to Chuma.

Modesto Larrea, spoke as a representative of the Chuma Action Center, which headed the enterprise. He expressed gratitude to Daniel Riveros for his cooperation; recognizing also the selfless effort and work of the center's commander, Santiago Alcazar R., and its finance secretary, Gonzalo Alcazar R. Concluding, he highlighted the importance of the Pilgrims Brigade in carrying out works of community benefit.

9925/12948

CSO: 5500/2003

BOLIVIA

BRIEFS

**DIRECT DIAL SYSTEM ANNOUNCED**--The National Telecommunications Enterprise (ENTEL) today dedicated a system of direct international dialing between Cochabamba and the rest of the world. The information was revealed by ENTEL authorities who stressed the importance of this achievement and added that with the present system it will be possible to do without the operators from the central offices in La Paz. A three minute international call will cost 14 million Bolivian pesos. [Text] [La Paz La Red Panamericana in Spanish 1700 GMT 1 Oct 86 PY] /12913

**TELEVISION RELAY STATION**--The Gran Poder Cooperative has donated a television relay station to Sorata, Larecaja Province. [Summary] [La Paz EL DIARIO in Spanish 20 Sep 86 p 6 PY] /12913

**TELEPHONE EXPANSION LACKS FUNDS**--The La Paz Automatic Telephones Enterprise (TASA) needs at least \$50 million to carry out the seventh telephone service expansion project in the city, TASA General Manager Enrique Ackermann has said. The project includes the installation of 50,000 lines, but he explained that the comptroller general of the republic has ordered a freeze on the work as a result of a number of irregularities in the call for bids. The TASA official further noted that TASA, and much less the government, do not have the financial resources to continue with the project. Referring to public pay telephone service, Ackermann said pay telephones that still operate with the 5-peso coins that were withdrawn from circulation long ago, are being removed gradually because TASA is losing money with them. Therefore, it has been decided to remove the 550 pay telephones to adapt their coin slots to accept the tokens that replaced the 5-peso coins. He said that reinstallation of these instruments will begin in January because their repair and installation will take a few months more. Ackermann emphasized that the price of the tokens and their payment system still have not been established, but added that TASA already has the tokens. [La Paz EL DIARIO in Spanish 15 Sep 86 p 2] 9925/12948

CSO: 5500/2003

ST LUCIA

PAPER CALLS FOR GREATER GOVERNMENT INVOLVEMENT IN TV

Castries THE WEEKEND VOICE in English 13 Sep 86 p 2

[Editorial]

[Text]

**FOR** the last 20 years, television, off and on, has been a major topic of discussion in St. Lucia. It all started with the modest attempts by SLTV in the 1960s to provide a service to St. Lucians and has continued now with the efforts by Helen Television System, which came on the scene nearly four years ago, promising to usher in something new and exciting in television viewing.

In recent times, however, the debate over local television has raged on, sometimes furiously not only in Castries but in the south and other parts of the country as well where various people, some capable some incapable, have been allowed to enter the industry primarily with the intention of providing a decent service, but all failing along the way, for one reason or another.

So after 20 years in the television business, so to speak, St. Lucia does not have a national or proper television system as Barbados, Trinidad or Martinique has. What it does have, however, is no shortage of individuals invading the homes of our people in all parts of the island showing us what they — a very small minority, in some cases a single individual — think we should see.

Worse than that is the fact that the country has no official policy for television, a very powerful, important and sensitive medium. And this at a time concern in the region, about the ill-effects of foreign television programmes, especially those beamed by satellite from the United States.

Frankly, we do not agree with all that we hear about satellite TV programming, be it from the region's intellectuals, cultural activists, politicians or even TV system managers- people with their own biases and prejudices who, given the chance would willingly assume that present role of the Local TV operators and decide among themselves what we should and should not see without the slightest consideration for the our own views.

But we do believe that St. Lucia is at the stage where Government input is desperately needed to point the development of television in a direction that will reflect the aspirations of a people coming out of a very unique colonial experience.

Unfortunately, until now, the Government has seemed content to allow the local TV industry to develop on its own steam notwithstanding the dangers that are obviously inherent in such a policy. It has taken more than 18 months for a statement by the Prime Minister that the Government would regulate television broadcasting to materialise.

We welcome the publication of the Telecommunications Act 1986 which seeks to update existing legislation dealing with telecommunications, including television. We will comment on that particular legislation at a later date, after studying it closely.

Suffice it to say however that we consider Government input in the television direction of the country very crucial at this stage, if it frees the public from the poor, inefficient, unprofessional and unplanned service that we have been subjected to for the last two decades, and gives some semblance of dignity to the aspirations of our people at this critical stage of our development.

INDIA

# INDO-SOVIET PROTOCOL ON COMMUNICATIONS SIGNED

New Delhi PATRIOT in English 4 Oct 86 p 7

[Text]

Moscow, Oct 3 (PTI) — Telephone calls from India to Moscow are expected to be put through with the same expedition as in the other direction when operator dialling from Delhi will become semi-automatic on the new year's day.

This is made possible under a protocol signed here by Mr D K Sangal, Secretary of Department of Telecommunications, and Mr G G Kudriavtsev, First Deputy Minister of Posts and Telecommunications in the USSR.

The Soviets have at the same time offered to extend direct dialling facilities to 100 Indian subscribers in Moscow including embassy officials, trade representatives and journalists.

Telephone calls from India can also be made to these Indian numbers as well as 900 other foreign diplomatic, business and journalistic representatives and to Soviet organisations who maintain relations with foreign countries.

Mr Sangal said that India will study the extension of subscriber dialling service now available to 14 countries for the Soviet Union as well.

The International Telephone Exchange introduced STD facility in Moscow during the 1980 Olympiad, and later used the equipment for internal STD service, according to Mr Kudriavtsev.

The worldwide STD facility

was subsequently reintroduced in 1981 for the benefit of diplomats and business representatives in the foreign community as well as to foreign correspondents who specifically sought it.

At present, the facility is available to four telephones in the Indian embassy.

The Indian and Soviet delegations have agreed to study joint development of telecommunication technologies and equipment for possible co-production to be used in their as well as third countries.

Co-production of digital telephone exchange equipment, digital transmission equipment including optical fibre systems are of interest to both the countries. Mr Sangal is of the view that Soviet and Indian telecommunication expertise are now of the same level.

INDIA

## EXPERTS FOR CLANDESTINE TRANSMITTER IN PUNJAB

Bombay THE TIMES OF INDIA in English 7 Oct 86 p 1

[Text]

AMRITSAR, October 6  
(PTI).

**EXPERTS** are investigating whether terrorists are operating a high-powered transmitter somewhere in Gurdaspur or Amritsar districts.

The existence of such a transmitter came to light when suspected terrorists jammed the communication set-up of the state police, known as "Duplex" system, for about 30 minutes on September 30.

This system links all district police headquarters in Punjab and is used for giving alerts, according to police sources.

The district police wireless system was also jammed for some time on the same evening and this is not possible without a high-frequency transmitter with tall antennae, the sources said.

They did not rule out the possibility of the transmitter being located across the border in Pakistan.

The terrorists not only jammed the communication set up, but also surprised police officials by establishing contacts on their system.

Meanwhile, three suspected terrorists were arrested and a mini-arms factory supplying weapons to extremists was unearthed during the last 24 hours.

In Patiala, the police unearthed a mini-arms factory and arrested Saranjit Singh, who was running it in a house

in the government press colony allotted to his mother, a press employee.

Saranjit was nabbed while he was taking out four revolvers.

In Hoshiarpur district, two suspected terrorists were held and two stolen scooters recovered from them. They were identified as Sarwan Singh of Kotla village and Surinder Kumar of Tand.

In Chandigarh, it was disclosed today that the underground "Panthic committee" had masterminded the attempt on the life of Punjab police chief, Mr. J. F. Ribeiro. The responsibility of executing it was given to a dismissed police constable and four others.

### LONE BLACK SHEEP

Disclosing this, Mr. Ribeiro said the assailants also had inside information about his movements and deployment of security. Someone from the force had definitely helped the gang in surveying the area.

Mr. Ribeiro said the former constable, Sukhdev Singh alias Sukha, sat in the jeep along with the driver in a police officer's uniform while three others fired at him.

The police chief said that while the "black sheep" who helped the terrorists would be found out "it is not fair to blame the entire force for the incident. My men have been doing a fine job and I am proud of them".

Mr. Ribeiro said the real security lapse was that the terrorists could enter the heavily guarded Punjab armed police (PAP) complex at Jalandhar. They appeared to have avoided entry

through the main and other gates despite being in uniforms and came in a jeep from an unguarded gap in the boundary wall.

The Punjab chief minister, Mr. Surjit Singh Barnala, today however admitted that there were lapses in the security at the PAP complex and said these would be set right.

Mr. Barnala said no action had been taken as yet. Asked if any inquiry was being conducted, he said all senior officials were present in the complex. It was not known from which gate the miscreants entered. He said he had not held talks with the Centre on this issue so far.

Security forces also recovered contraband gold worth Rs. 18 lakhs.

The Amritsar police superintendent, Mr. H.K.S. Kahlon, said a belt containing six gold bricks was recovered from a drain by the Border Security Forces yesterday. He said the BSF started searching the drain following the recovery of the body of a notorious smuggler on Friday.

**Islamabad (AFP):** Pakistan has never trained Sikh or other terrorists, and has no intention of interfering in the internal affairs of any country including India, Pakistan's minister of state for foreign affairs, Mr. Zain Noorani told Parliament.

Mr. Noorani was responding to a motion in the senate seeking to discuss reports that the person who fired shots at the Prime Minister, Mr. Rajiv Gandhi, last week had said he was trained in Pakistan. The minister said any such allegation was baseless.

/9274

CSO: 5650/0032



INDIA

## INTERNATIONAL DIALING EXTENDED TO 254 TOWNS

Bombay THE TIMES OF INDIA in English 3 Oct 86 p 5

[Text]

COCHIN, October 2: The international subscriber dialling (ISD) facility has now been extended to 254 towns in India with the inauguration of the facility at 20 towns in Kerala on Saturday last.

A high-power working group was appointed in December 1985, to look into the extension of ISD facilities when these were available only from New Delhi, Bombay, Calcutta and Madras. Only six countries could be dialled from these cities.

The number of countries to which the ISD facilities were available was subsequently increased to 14.

According to information from the United States, the calls received in the U.S. within the first week of introducing ISD were 140,000 paid minutes.

During the same period, booked calls numbered 80,000 paid minutes.

Dr. P. N. Choudhury, member, technology, telecommunications, said the income thus accrued from ISD calls to the U.S. in the first week since August

14 worked out to between Rs. 6 and 7 lakhs per day.

Already 38 towns in Kerala have this facility, which will shortly be extended to Calicut, Cannanore and Badagara.

The countries to which direct calls could be made now from India are Australia, Austria, Belgium, France, Hong Kong, Italy, Japan, Malaysia, Netherlands, West Germany and Turkey.

In the next phase, Zimbabwe, Iceland, the Seychelles, Gibraltar, Luxembourg, Tonga, Papua New Guinea, Portugal and Hungary, would be added to the list.

The first ISD facility was opened in India in 1975, between Bombay and London.

Dr. Choudhury said the department was aware that most overseas calls from Kerala were to the Gulf countries.

Yet, until the Bombay-Sharjah underwater cable link was commissioned by mid-1987, the ISD facility to those countries would have to wait.

/9274

CSO: 5550/0016

INDIA

## HIMACHAL PRADESH TRIBAL AREAS TO BE LINKED BY SATELLITE

New Delhi PATRIOT in English 27 Sep 86 p 5

[Text]

Kalpa (HP), Sept 26 (UNI)—After centuries of isolation, tribal areas of Himachal Pradesh will soon be linked with the rest of the country via satellite.

These areas which depended on a few wireless stations for transmission of their messages for just a few hours everyday, will now have two earth stations to link them to the satellite.

This facility will greatly increase accessibility of these areas which remain cut off for more than six months in a year on account of rain and snowfall.

While the earth station here will be operatable by the end of this year, bringing Kinnaur district on the coun-

try's telecommunication map, the earth station at Keylong, headquarters of Lahaul-Spiti district, is expected to be commissioned by the middle of next year.

With the work for establishment of the earth stations, the telecommunication authorities have simultaneously taken steps for automatic exchanges at Kalpa and Keylong, which will bring these places on the national subscribers trunk dialing (STD) circuit.

Telecommunications (north-west) circle general manager A K Chaudhury, who visited the tribal areas, told a group of newsmen that these parent exchanges would act as a nucleus to extend the telephone facility to a large number of villages by creating a network of long-distance public call offices.

He said the telecommunication services in the tribal areas would be highly subsidised considering the huge investments involved in the setting up of the earth stations, each costing Rs one crore, and laying of lines in the difficult hill terrain.

The tribal areas have also been exempted from the commercial norms for the opening of new exchanges in order to provide them telecommunication services as a "social obligation".

/9274

CSO: 5550/0011

INDIA

# PARALLEL TELECOM NETWORK PLANNED FOR BUSINESSMEN

Bombay THE TIMES OF INDIA in English 3 Oct 86 p 10

[Text]

**BOMBAY, October 2:** The Department of Telecommunications has finalised a feasibility study for the setting up of a parallel telecommunications network for trade and industry. Termed as Business Subscribers Network (BSN) and codenamed Vikram, the network is planned to be operational in the four metropolitan cities by end of 1988 and thereafter in eight other industrial towns.

The four metropolitan cities will be connected by satellite and the other cities by microwave. Special digital exchanges will be imported for the purpose. Giving these details at a meeting with the Confederation of Engineering Industry here on Wednesday, Mr. P. K. Roy Chowdhry, deputy director general of the department, said that further details of the scheme would be worked out only after knowing the response from businessmen.

Under the system, he said, a subscriber would be connected by radio linkage for voice and data to the main transmission centre in each city. The cities in turn will be interlinked by satellite and microwave. Industrial users in backward areas/ rural areas can also hook into this network using low cost earth stations.

Mr. Roy Chowdhury said the network is mainly intended to facilitate data transmission, teletext, videotext, facsimile and have less emphasis on voice transmission. It can also be used for computer networking and electronic banking. While the tariff structure is yet to be worked out, indications are that it will be in the region of 1.5 times the rates on the existing network.

Mr. Roy Chowdhry said that initially the system will have 5,000 subscribers which will be gradually increased to 20,000. At a later stage, the network system is proposed to be changed into a corporation, he said.

The total capital investment per

subscriber terminal will be between Rs. 2 lakhs to Rs. 2.5 lakhs, including Rs. 1 lakh for the radio link. The deposits will either get normal interest or get tax deduction.

The network will be upto the building of the subscribers and the system within the building will have to be installed by the subscribers. Inter-communication from this network to the existing P&T network will be possible but not vice versa. Subscribers can also have a mobile set for the purpose within a radius of 8 km.

It is expected that in the new network there will be little scope for tampering of the system. Besides, the billings will be computerised. The department has planned to make available broad band facilities after 1995. The proposed network can be hooked up to special EPABXs. The government of India CDOT technology for EPABX or any of the other manufacturers in the country do not have the required technology for the purpose and the same will have to be imported, Mr. Roy Chowdhry said.

INDIA

## REPORT ON MILITARY COLLEGE OF TELECOMMUNICATIONS

Bombay THE TIMES OF INDIA in English 4 Oct 86 p 17

[Text]

### MHOW:

**T**HE military college of telecommunication engineering (MCTE) here is planning induction of fibre optics communication systems into the armed forces.

"We are seriously examining the possibilities of setting up a fibre optics communication systems laboratory here," says Lt. Gen. S. L. Mehrotra, commandant of the college.

"We hope the government will allot the required funds for the laboratory in the coming financial year," he told a group of newsmen visiting the college.

### COMBAT COMMUNICATION

The college imparts training to signals personnel in the field of combat communication, basic electronics, electronic warfare and computer science and technology. "Peace or war, the corps of signals has to be ever-alert and act as eyes and ears of the armed forces," Gen. Mehrotra said.

He said the college came into being on October one, 1967, as a successor to the erstwhile School of Signals which had been working as the training institution of the army in the field of electronics and telecommunications since the British period.

"This institution, thus, is as old as the military vintage of Mhow itself and has been functioning as the think tank of the armed forces."

Gen. Mehrotra said the signals officers, after completion of their three-year degree engineering course here, were awarded the B.Tech. degree of the Jawaharlal Nehru University.

### COMPUTER SCIENCE

Some of the brilliant students were sent abroad for their M. Tech. degree while a percentage of them were sent for further studies to Indian institutes of technology (IITs) and the Indian Institute of Science, Bangalore.

Gen. Mehrotra said the college itself was also conducting post-graduate courses in communication engineering, computer science and systems but they were not recognised. "We are trying for the recognition of these courses."

Several friendly countries like Nigeria, Bangladesh, Iraq, Zambia, Zaire and Sudan, had been sending their service officers for "advanced communication training" here, he added.

Without keeping any fixed time schedule, students in the college are trying to improve upon every communication system. It is at the various faculties here that they have designed a number of indigenous communication systems to help the country save a large amount of foreign exchange.

"Our aim is to make the communication system totally indigenous," Gen. Mehrotra added.

The college has just concluded an electro-magnetic compatibility (EMC) and electro-magnetic interference (EMI) studies project for the department of electronics.

Col. S. K. S. Kirpekar, in-charge of the EMC/EMI faculty claimed that studies on these two subjects were carried out for the first time in the country with the help of laboratories which had been set up using computer-

controlled sophisticated measuring equipment.

The college had developed two mobile laboratories which carried such equipment of different parts of the country to undertake measurements and to survey the extent of electro-magnetic environment pollution.

Col. Kirpekar said the report of the studies had now been submitted to the government.

Keeping in view the changing communication needs of the armed forces in the next century, Gen. Mehrotra said, the college had conducted two seminars during the last training year on "communications in 2,000 A.D."

### MANUAL CODING

"At our faculty of computer sciences, we are trying to develop a computerised communications system to do away with the existing manual coding and decoding communication systems," Gen. Mehrotra added.

The faculty also has such sophisticated radars which can monitor Russian, Chinese, Japanese, Indonesian and INTELSAT satellites.

Besides, the MCTE is engaged in studies on integration of developing "state of art" into the communications system, microwave and satellites communications, laser communications and manpower development in the field of computers.

The college also has an all-arms wing where officers belonging to the other wings of the army are imparted training in communication systems.

And to cater to the needs of the students, MCTE has a big library containing more than 30,000 books.

/9274

CSO: 5550/0012

INDIA

BRIEFS

**WEST BENGAL TELEPRINTER PROJECT**--New Delhi, 30 Sep--The Centre has issued an industrial licence to the West Bengal Electronic Industry Development Corporation (WBEIDC) Limited for manufacture of electronic teleprinters. Under the licence, the corporation will manufacture 3,000 electronic teleprinters annually which will have to be marketed under an Indian brand name. The industrial licence also specifies that the need of foreign collaboration and the financial and technical terms will be settled to the satisfaction of the department of telecommunications. The issue of licence, subject to the conditions mentioned, follows the chief minister, Mr Jyoti Basu's request to the Centre to expedite the matter during the Prime Minister's visit to Calcutta last month. The corporation had applied for the grant of an industrial licence early last year. [Text] [Calcutta THE TELEGRAPH in English 1 Oct 86 Supplement p 1] /9274

**WORLD COMPUTER MEET**--Bombay, 28 Sep--A conference on "Computer Communication for Developing Countries," (CCDC '87), organised by the International Council for Computer Communication and the department of electronics, government of India, will be held at New Delhi from October 27 to 30, 1987. The conference will discuss computer communication and issues relevant to developing countries. Topics such as computer and satellite communications, office information systems, message systems, teletext and videotext, fibre optics, characteristics of information society for developing world and challenges in introduction of new technologies will be covered. About 200 participants from the country and an equal number from the world over are expected. The conference will provide a meeting ground for computer specialists and technologists from both the developing and advanced countries. The participation of developing countries in the ICCC biennial conferences on computer communications had been meagre. To boost the development of information technology and computers, Computer Society of India, International Federation for Information Processing and the UNESCO had organised two international conferences Network '80 and Network '84. [Text] [Bombay THE TIMES OF INDIA in English 29 Sep 86 p 3] /9274

**EXPORTED COMPUTER SYSTEMS**--Processor Systems India Limited (PSI), a Bangalore-based computer manufacturer, has recently exported a large consignment of its computer systems to Software Consultants Corporation (SCC) of Tokyo. The consignment included three MC 68020 based 32-bit host systems and 90 colour graphic work stations. This consignment completes a two-year contract

between PSI and SCC, a business relationship which earned India foreign exchange amounting to \$500,000 net. PSI Data Systems Limited recently launched the country's first indigenously developed 32-bit computer, Psirius. Even before it was a month old on the market, the company received orders worth more than Rs 1.5 crores. This system offers novel features like separate 68000-based controllers for peripherals, an ultra-fast response link of 4000 kilobauds between the terminal and the main system, a superset of Unix operating systems and a powerful relational DBMS. [Text] [Madras THE HINDU in English 25 Sep 86 p 23] /9274

CSO: 5550/0014



PAKISTAN

BRIEFS

TELECOMMUNICATION LINKS WITH INDIA--Pakistan and India have agreed in principle to transmit the facsimiles of documents. This was stated by the zonal director of the central telecommunication region, who recently held talks in New Delhi on starting work on a direct dialing system between the two countries to enable them to establish modern communication links. [Text] [Karachi Domestic Service in Urdu 0200 GMT 19 Oct 86 BK] /12232

CSO: 5500/4702

QATAR

NATIONAL TELECOMMUNICATIONS NETWORK DESCRIBED

Dubayy KHALEEJ TIMES in English 16 Sep 86 p 2

[Article by R. Mohan]

[Text]

DOHA—Telecommunications is one sector where Qatar can rightly be proud of its achievements. Remarkable progress has been made there in the last 15 years, transforming a rudimentary system into one of the best in the world. Over 90 per cent of the country is covered by the telephone network, which offers nearly 118,000 lines.

There is hardly a country with which Qatar does not have direct telecommunication. Three satellites link Qatar with the rest of the world. Two of these are from Intelsat, one over the Indian Ocean and the other over the Atlantic. The third and the latest is the Arabsat. Qatar is among the few Arab countries which completed ground receiving station facilities to link up with Arabsat.

These satellite services are expensive, about \$390 per circuit hour per satellite. Qatar also invested some \$16 million towards the Arabsat project and the cost of constructing an earth receiving station is estimated at QR34 million. Qatar has three of these stations now.

Qatar National Telephone Service (QNTS) was set up in 1972 as a joint venture between the government and the multinational, Cable and Wireless (C&W). In those days C&W had a 75 per cent ownership of the venture. Since then the government has gradually increased its

holding to 99 per cent. C&W and the Telecommunications Department run the international network, with the former paying three per cent royalty to the government.

**International network**

The international network is the only section which earns some revenue, since the domestic network is almost free. Subscribers are only charged a rental, with local calls made free. The efficiency of the telephone network was increased with the opening of a digital exchange in Khalifa Town last year. It cost nearly QR19.8 million and added to the network an initial capacity of 27,000 lines. The capacity can be increased to between 35,000 and 40,000 lines. This was the third exchange in the country and brought the number of lines available to 118,000.

It is now possible to get a new phone connection within a short time. Last year it was estimated that there were nearly 75,000 subscribers and that the demand for new connections was about 1,225 every month.

On July 15, charges for international calls were reduced by almost 40 per cent. A reduction in calls made to the countries of the Arab League Cooperation Council in 1985 was about 30 per cent. Charges to Egypt, for instance, dropped from QR8.30 per minute to QR7.50. If dialled

directly, the charges are same during business hours, but between 8pm and 7am and on holidays, the subscriber pays only QR5.40 per minute.

The number of calls made overseas increased from 13,000 to 14,000 within about a fortnight after the reduction of charges. During the Eid Al Adha holidays, when cheap rates were charged throughout the day and the night, in the calls to all destinations were 15,000. But authorities feel that it is too early to assess the impact of reduced rates. "It takes much longer to steady off," said an official.

Reduced rates also mean less revenue. An official estimated that it would require an increase of 30 per cent in the number of calls made to destinations abroad for the revenue to get to the same level as before. Authorities have noticed increasing traffic on the lines to England, Pakistan and India. Requests have been made for additional lines to each of these countries. Additional lines are likely in a few months to England.

There are 50 international circuits that link England with Qatar, since the London exchange handles calls to other countries as well. There are 20 lines that link India, 15 to Bombay and five to Madras. Pakistan has provided 15 lines.

Authorities deny that there is a congestion on the international lines, even after 8pm when most social

calls are made. More often than not it is the lack of a free line in the country called. For instance, the caller might get through to Bombay quite easily, but get stuck with busy lines beyond Bombay. A good time to call, the officials say, is early morning, when most lines are free.

After all, Qatar has to pay for those lines, 24 hours a day and 365 days of the year. The maximum number of calls from Qatar are made to the UAE, some 4.3 million minutes every year. This is followed by Egypt (2.7m) the UK (2.4m) India (1.8m) and Pakistan (1.3m). Calls to Sri Lanka are routed through London, which also takes in a number of calls to other countries.

### Busiest day

Monday is the busiest day for overseas calls, since the week for business begins on that day in most countries. Similarly Thursday is a busy day here, with the caller setting things right for the next three days. Calls made to Gulf countries even out with the number received, with Bahrain being an exception. More calls are received here from Bahrain than those made from here.

However, the decline in business has brought about a general decline in the volume of calls, though figures for telephones were not immediately available. Telex calls indicate the trend. The number of overseas telex minutes in April was 157,929, with the average declining to 150,976 in the next three months. There was a slight increase in July, as might be expected since business is resumed after Ramadan.

Telex calls made within the country also declined in terms of minutes, from 70,545 in April to an average of 69,719 between April and July. Even the number of telex machines

installed declined from 1,081 in April to 1,068 in July. The maximum number of telex calls made are to the UK, with some 37,600 minutes used during July. Next come the UAE (22,200) the US (9,900) Bahrain (9,700) France (8,900) and West Germany (7,100).

It is Cable and Wireless again, in conjunction with the Telecommunications Department, which manages the telex service. It offers two types now, one the latest electronic machine and the other electromechanical. The electronic machines are getting more popular, with nearly 833 of them installed until July, compared to 236 of the electromechanical type.

Charges for the electronic ones are higher, about QR550 per month, compared to the QR350 per month for the electromechanical. Charges for the electronic ones which have dual script, Arabic and Roman, can go up to QR800 per month. Some of the subscribers who do not mind the noise of the old model, nor the miles of tape it spews out stick to them. The electronic ones have such facilities as the word processor and the memory storage.

Apart from satellites, Qatar has microwave links with Saudi Arabia and the UAE. The link with Saudi Arabia was set up in 1982 at a cost of QR42 million. An addition to the telecommunication network last year was the QR25 million maritime coastal station. It is remotely controlled through an operation and receiving centre in West Bay, Doha. It helps to keep in touch with ships at sea, ensuring navigational safety.

A telephone subscriber in Qatar can send messages to any ship nearby through the coastal station. Each ship has a two-way communication link with the station when near the

country. This has been a great relief to sailors in distress, particularly for those whose vessels are hit in the 'tanker war.' There are any number of cases where the sailors have called their families from aboard a ship, thanks to the modern coastal station.

One of the chief beneficiaries of the modern telecommunications set-up has been the television and radio station.

Satellites have brought about a big change in the quality of the programmes, though the emphasis is on local programmes, particularly in the Arabic channel. In a programme screened recently, TV personnel recalled the days when they had to struggle to put out an English news service of about 10 minutes every day. Films were then received by air, which meant collecting them from the airport and then editing them laboriously. Satellite beams have made that unnecessary.

The English channel for instance receives three film feeds a day, starting 2pm, two from Brussels and one from London. Needless to add this helps news coverage enormously. Viewers in Qatar have also been treated to live telecasts of Olympics and the World Cup.

Now that Arabsat is available, TV authorities expect increasing coordination with other Arab TV stations in news and feature programmes.

Satellites have resulted in better telex, teleprinter and telefax services. Qatar has introduced data post system to 36 countries. It is linked with 14 countries through electronic post, which is a better version of telefax. Qatar is the fifth country in the world to have this facility.

All this progress was possible because of a five-year plan launched in 1979-80. The total cost of the plan was then estimated at QR340 million.

NIGERIA

SWEDES PROVIDE TELECOMMUNICATIONS NETWORK

London AFRICA ECONOMIC DIGEST in English 27 Sep 86 p 13 of the AED Special Report supplement

[Text]

Sweden's **Ericsson Network Engineering** and **Skanska** have won a SKr 600 million (\$87 million) contract to install a sophisticated telecommunications network for **Nigerian National Petroleum Corporation (NNPC)**.

The system, following the route of crude oil and product pipelines for 940 kilometres from Lagos to Benin and from Warri to Kaduna, will use the latest technology including fibre optic cable, to provide a substantial capacity for data communications, signalling and telefax messages the full length of the pipeline network. It will play an important role in monitoring quantities of oil in the pipeline and allow service engineers to transmit and receive verbal and written messages.

The project — under discussion for at least five years — finally got the government go-ahead two months ago, an Ericsson spokesman told AED. The contract was signed in early September and completion is scheduled for September 1988. NNPC will be making cash payments to the contractors.

Skanska will undertake the civil engineering works, including laying the cable and erecting administrative buildings and equipment shelters. Ericsson, in conjunction with local **LM Ericsson (Nigeria)**, will supply and install the fibre optic cable, radio relays, transmission equipment and 12 digital telephone exchanges. Ericsson has already started work, the spokesman adds.

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NIGERIA

BRIEFS

NNPC ORDERS TELECOMMUNICATIONS NET--Ericsson and Skanska together have received an order from Nigeria worth 600 million kronor. The order is for a private telecommunications network for the state-run oil company NNPC along a 900-km pipeline between Lagos and Kaduna. The order is evenly divided between the two companies and installation work will begin this fall. The entire project is to be complete by September 1988. [Text] [Stockholm DAGENS NYHETER in Swedish 8 Sep 86 p 14] 9336

CSO: 5500/2738

USSR

# U.S.-ISRAELI AGREEMENT ON RADIO RETRANSMITTERS SCORED

## 'Ideological Sabotage' Claimed

LD011832 Moscow TASS International Service in Russian 0844 GMT 1 Aug 86

[Text] New York, 1 Aug (TASS)--TASS correspondent Maksim Knyazkov reports: With Israel's assistance the Reagan administration has taken a new step aimed at extending its ideological sabotage against countries of the socialist community and the Arab peoples.

A ceremony to initial a U.S.-Israeli agreement, in conformity with which 16 re-transmitting stations will be opened on Israeli territory in the near future, to service such subversive radio centers as "Voice of America," Radio "Liberty" and Radio "Free Europe" has taken place in Jerusalem in the presence of U.S. Vice President G. Bush.

Observers are pointing out that an important role in stepping up the psychological war not only against socialist countries is being assigned to the new installations. The radio stations "Voice of America," "Liberty" and "Free Europe" are mouthpieces for the forces of Zionism which are using them to expand hostile propagandist activity against Arab states.

Washington intends to spend at least \$200 million on this project which has become further proof of the strategic alliance between Washington and Tel Aviv which is getting stronger. This is only a part of the means that Washington allocates for the conduct of a psychological war that is to secure its imperial claims through propaganda. Thus, Washington has already allocated \$1.3 million to modernize the "Voice of America." Those on the banks of Potomac are sparing no means also to provide such CIA brainchildren as radio "Liberty" and radio "Free Europe" with the latest equipment. The administration has requested for them \$167.5 million in fiscal year 1987. The stream of lies splashed out by these mouthpieces of the "cold war" is also steadily increasing.



BROADCASTING Magazine Cited

LD220914 Moscow TASS International Service in Russian 0338 GMT 22 Aug 86

[Text] New York, 22 Aug (TASS)--Correspondent V. Kikolo reports:

Official Washington, which is mercilessly saving on the needs of ordinary Americans, displays true generosity when it is a matter of the need to expand ideological subversion against the USSR and the other socialist countries. According to the Magazine BROADCASTING, influential members of the U.S. Congress and the Reagan administration have assured the leadership of the International Broadcasting Council, under whose formal jurisdiction are the subversive radio stations Voice of America, Liberty, and Free Europe (RL and RFE), that it will encounter "no difficulties with regard to funds" which will be required for the construction of a powerful retransmission complex in Israel for broadcasting to the Soviet Union.

And the funds needed, the magazine notes, are not small--between 200-300 million dollars. According to the agreement initialled by Washington and Tel Aviv, it is planned to build 16 transmitters in southern Israel, each of them with 500 kw power. This, as BROADCASTING points out, is "the most powerful transmission complex in the West" and will be used on an equal footing by the RL and RFE, which are waging psychological war against the USSR, socialist countries of Eastern Europe, and also against Afghanistan and the states of East Africa. The first \$40 million are to be allocated for these purposes this autumn.

In connection with this they note here that for the modernization of Voice of America alone, the Reagan's administration already has allocated \$1.3 billion. As far as Liberty and Free Europe are concerned, Washington intends to grant them \$167.5 million in the next fiscal year.

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CSO: 1807/32

USSR

TV COOPERATION PROTOCOL SIGNED WITH FRG

OW091126 Moscow Television Service in Russian 0045 GMT 9 Oct 86

[From the Novosti Newscast]

[Text] The USSR State Committee for Television and Radio Broadcasting and FRG's second television program ZDF signed a working protocol on cooperation in the field of television for 1986-87 in Moscow on 8 October. The document was signed by Comrade Kravchenko, first deputy chairman of the USSR State Committee for Television and Radio Broadcasting, and ZDF Director General Stolte.

[Video shows signing ceremony and Stolte speaking to camera] This agreement is of great importance for both organizations. First of all it concerns television days, and today we agreed on the organization of these days. A ZDF day will be held on the USSR State Television and Radio Broadcasting System and Gosteleradio Day will be held on the ZDF television system. I am certain that cooperation will be continued in the form of exchanges of camera groups, programs, and direct broadcasts. I am happy that I had the opportunity of signing this agreement today.

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CSO: 5500/1006

FRANCE

#### FRENCH CNET, ENST R&D PROGRAM ABSTRACTS

[Editorial Report] Paris L'ECHO DES RECHERCHES in French in its 1986 second quarter issue presents the English-language abstracts appearing below. "The articles published in L'ECHO DES RECHERCHES present studies carried out in CNET [National Center for Telecommunications Studies] or in the ENST [National School for Advanced Telecommunications]."

"Thin-layer transistors for addressing of liquid crystal flat panel", by M. Le Contellec, F. Morin, and F. Richou; pp 5-14

"Liquid crystal flat panels are now beginning to be available on the market, especially in the micro-computer business. Yet, they still lack in contrast, and their angle of view is inadequate, which accounts for the fact that they cannot compete with the rather cumbersome but high-quality cathode ray tube.

"Around the world, many laboratories are presently seeking to replace multiplexed addressing, traditionally used with this kind of panel, by another form of addressing using an active electronic element for every pixel.

"Taking advantage of the widespread efforts made in connection with the research for amorphous silicon solar cells, dramatic progress has been achieved towards mastering this material. This paper describes how to create a so-called 'thin-layer' transistor made of hydrogenated amorphous silicon on a glass plate in order to make a liquid crystal flat panel controlled by a matrix of such transistors."

"Design and assessment of access dialogues for telephone services", by J.-Y. Jegou, J. Damay, and G. Brillet; pp 15-22

"Over the last ten years, there has been persistent diversification of telecommunication services and terminals, a trend which is bound to be confirmed with the advent of the ISDN. Since adoption of these services by the users is highly dependent upon the dialogues used to access them, CNET has chosen to carry out specific studies which should begin at the stage of application design. These studies are based on an optimisation process from initial definition of the service until it is marketed. A special dialogue simulation tool was designed for laboratory experiments which have a very important role to play in this process. Among other things, it has been used to study the control dialogue for the RENAN digital telephone terminal."

"A 64-kbit/s digital frame for multimedia services", by J.P. Temime; pp 23-26

"This paper describes a method to multiplex on the same 64 kbit/s digital channel, several information flows such as sound, pictures, data or user-user signalling.

"This digital frame was first introduced within the 'CEDRE' Project on teleconferencing, and was then adopted by the CEPT as a recommendation for all multimedia applications. It was also approved by the CCITT for teleconferencing and will be adopted for all interactive audiovisual services."

"Network economics: the transformation of telecommunications", by N. Curien and M. Gensollen; pp 27-32

"Telecommunications are currently undergoing far reaching changes, not only at technical level, which have an impact on many areas: marketing, with the gradual introduction of more efficient charging systems; organisation, with the issue of how far is the monopoly to extend in order to prevent a chaotic situation from developing; economics, the development of new services changes the role of telecommunications in the hierarchy of communication services and industries.

"This paper offers a reference framework for the carrying out of an economic analysis of these changes and provides bases for the political decisions to be taken."

"Cryptography and smart cards", by M. Girault, A. Bauval, and M. Campana; pp 33-46

"A number of problems related to teleinformatics security can be solved by using cryptographic processes. After an introduction, this paper discusses the basic notions involved in modern cryptography, and presents the most frequently used algorithms. The authors then describe how these algorithms may be implemented for existing or planned electronic payment applications using smart cards. The last section gives a more prospective outlook of one of the CNET's latest projects designed to provide a very high level of security where needed for future applications."

"Metal-base transistors", by E. Rosencher; pp 47-58

"The operating speed of current electronic components is chiefly restricted by the access resistor to the control electrode. The progress achieved in the field of epitaxy has now made it possible to make transistors whose metal base gives a resistivity of up to a hundred times less than that of transistors using doped semiconductors. In this paper, we shall describe the production techniques, and the operating principles of this new class of device: the SMS, or Semiconductor/Metal/Semiconductor transistor, and the TBP, or permeable base transistor."

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CSO: 5500/A002

LUXEMBOURG

BRIEFS

LUXEMBOURG'S ASTRA SATELLITE--A new competitor is threatening the future of the French direct broadcast television satellite TDF-1, scheduled for launch when Ariane is healthy again. ASTRA, financed by a group of European stockholders, including the Grand Duchy of Luxembourg, is scheduled to be launched during 1987 and will be put into the geostationary orbit assigned to Luxembourg. ASTRA benefits from the latest technological developments making its performance and price very competitive compared to TDF-1 and to its German counterpart which were designed 7 years ago. Thus, it will broadcast 16 channels initially and 32 channels later, compared to only 5 for TDF-1, and each channel will rent for Fr 37 million compared to Fr 100 million for the French satellite. Obsolete even before launch, TDF-1 is likely to have serious problems renting its channels. Transmitting rights for TDF-1 granted by the previous government to the Berlusconi-Seydoux-Maxwell-Kirsch consortium have now been canceled. It will be difficult to attract new business in view of the Luxembourg satellite's considerably lower cost. [Text] [Paris SCIENCES ET AVENIR In French Jul 86 p 12] 25047/12948

CSO: 5500/A211

SWEDEN

## ERICSSON CLOSING FACTORY, CUTTING JOBS AT OTHER PLANTS

Stockholm DAGENS NYHETER in Swedish 3 Sep 86 p 14

[Article by Goran Jonsson]

[Text] When Ericsson closes its plant at Kungens Kurva in Stockholm, 300 people will lose their jobs. In Ostersund 100 people will lose their jobs and in Soderhamn 200 people will be effected by cutbacks in Ericsson's main sphere of activities, telecommunications.

This is management's plan, which will be presented to employees on Tuesday afternoon. The intention of management is to reduce the number of employees within the Ericsson Concern by a total of 4,800 persons, 2,800 of whom are in Sweden.

Yesterday negotiations began in accordance with the Codetermination Act on management's plans for the telecommunications sector in which 2,800 jobs will be eliminated, 1,800 of which are in Sweden.

### All Jobs Lost

As expected, it is the Stockholm region that will be hardest hit by the cutbacks. Virtually all 600 white-collar jobs will be eliminated in Stockholm, especially at Ericsson's main office at Telefonplan in southern Stockholm. In addition, the plant at Kungens Kurva will be closed in 1987. The component plant in Bollmora, which now employs between 500 and 600 workers, will also be closed. Neither organized labor nor company management would comment on how many people would be affected by these cutbacks.

In addition to all this, there are the cutbacks within Ericsson Information System that were announced last Friday. This will result in the loss of about 350 jobs at the plant in Barkarby when the production of picture tubes and keyboards is move to Blekinge.

### Labor's Approach

"I am almost convinced that the white-collar workers in the Stockholm can find new jobs," said Berndt Safstrom, chairman of the SIF (Swedish Industrial Salaried Employees Association) local at the parent company in Stockholm.



"But if an entire plant is shut down it may be difficult," Berndt Safstrom said.

The position of organized labor in the negotiations will be to propose measures to reduce costs in some other way than to reduce the number of jobs.

"We believe that much can be done within the organization. We must try to lower costs for storage and accounts receivable and find areas within the concern in which we can work together to keep costs down. I hope that no layoffs will be needed," Berndt Safstrom said.

According to management's plan, about 1,000 jobs will disappear by so-called natural attrition. But is that really a reasonable figure?

#### The Plan

"I cannot imagine that this will be possible. This figure must also include transfers and even early pensions," Berndt Safstrom said.

The main points in management's efficiency plan to improve slumping profits are listed below.

Ostersund: A restructuring will take place in 1987 to form an "industrial hotel," which means that the three main areas of interest within the Ericsson group will be housed under the same roof. The changes will mean a personnel reduction of 100 employees down to a level of 500.

Soderhamn: 200 persons involved in the production of power supply equipment for personal computers and other devices will lose their jobs. The Soderhamn plant sells its products to internal customers. Ericsson Information Systems, which is reducing its personnel by a total of 2,000 employees, is a major customer. The number of employees at Soderhamn will be reduced from 900 to 700.

Kungens Kurva in Stockholm: The plant will be shut down and 250 production workers and 100 white-collar workers will lose their jobs. This plant produces fiber optics products. This production will be transferred to the Norrkoping plant.

#### Natural Attrition

In addition to these three plants, Ericsson has nine more factories in Sweden with production in the field of telecommunications. At an unknown number of these plants, activities will be reduced gradually through natural attrition.

Production of the AXE system will not be affected by any cutbacks. Eighty percent of the company's public telecommunications division has some bearing on the production of components for the AXE system.

9336

CSO: 5500/2738

SWEDEN

BRIEFS

ERICSSON WINS FIBER OPTICS ORDER--Ericsson Telecom has landed an order from the Telecommunications Service. The order involves digital fiber optic transmission equipment for the telecommunications network. The order is worth 100 million kronor. [Text] [Stockholm DAGENS NYHETER in Swedish 9 Sep 86 p 14] 9336

CSO: 5500/2738

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